Culminating Experience Action Research Projects, Volume 11, Fall 2007

Edited by
Deborah A. McAllister and Sharon R. Deaver
April 22, 2008

College of Health, Education, and Professional Studies
The University of Tennessee at Chattanooga

Introduction

As a part of the teacher licensure program at the graduate level at The University of Tennessee at Chattanooga (UTC), the M.Ed. Licensure candidate is required to complete an action research project during a 3-semester-hour course that coincides with the 9-semester-hour student teaching experience. This course, Education 590 Culminating Experience, requires the student to implement an action research plan designed through (a) the Education 500 Introduction to Inquiry course, (b) one of the two learning assessments required during student teaching, or (c) a newly-designed project not used as one of the learning assessments.

With funding through a UTC Teaching, Learning, and Technology Faculty Fellows award, the Education 590 course is conducted through the use of an online, course management system (Blackboard Learning System Release 6), allowing for asynchronous discussion and use of the digital drop box feature for submitting required papers.

The course syllabus for Education 590 Culminating Experience is presented in the next section, followed by action research projects from fall semester 2007.

Deborah A. McAllister

Sharon R. Deaver

April 2008

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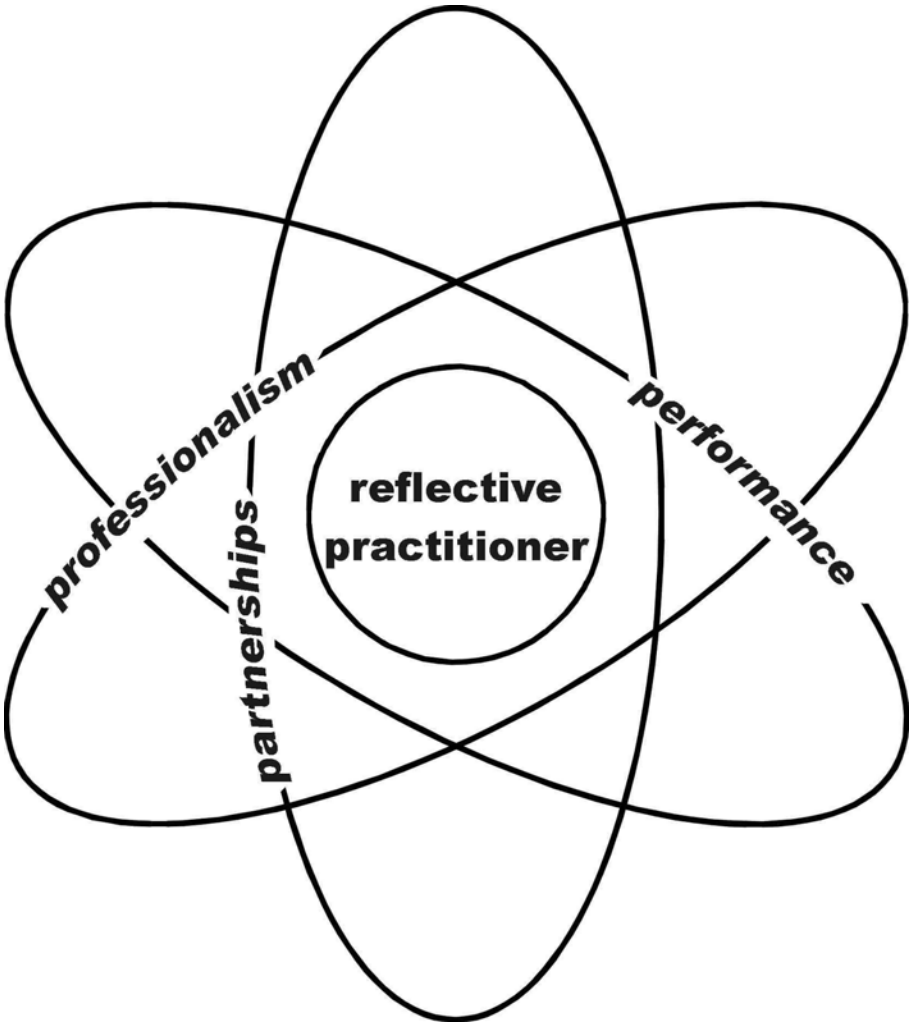

ATTENTION: If you are a student with a disability (e.g., physical, learning, psychiatric, etc.) and think that you might need assistance or an academic accommodation in this class or any other class, contact the Office for Students with Disabilities at 423-425-4006 or come by the office, 110 Frist Hall.

To enhance student services, the University will use your UTC email address (firstname-lastname@utc.edu) for communications. (See http://onenet.utc.edu/ for your exact address.) Please check your UTC email on a regular basis. If you have problems with accessing your email account, contact the Help Desk at 423-425-4000.

Educ 590 Culminating Experience – Fall 2007
Section 001, By Appointment, 3 credit hours

Instructor

Dr. Deborah A. McAllister
Office: Hunter 310C
Office hours: Monday and Tuesday, 12:00 p.m. to 5:00 p.m., or by appointment
Phone: 423-425-5376 (Office), 423-842-1607 (Home)
Email: Deborah-McAllister@utc.edu
Web site: http://oneweb.utc.edu/~deborah-mcallister/
Graduate Assistant: Sharon Deaver

Catalog description

Directed research or development project under faculty supervision. *Prerequisites: Admission to candidacy, approval of M.Ed. committee, EDUC 500 or EDUC 501. Co-requisite: EDUC 596.*

Recommended text and Web sites

American Psychological Association. (2001). *Publication manual of the American Psychological Association* (5th ed.). Washington, DC: Author.

The OWL at Purdue. (2007). *APA formatting and style guide.* Retrieved April 23, 2007, from http://owl.english.purdue.edu/owl/resource/560/01/

Degelman, D., & Harris, M. L. (2007). *APA style essentials.* Retrieved April 23, 2007, from http://www.vanguard.edu/faculty/ddegelman/index.aspx?doc_id=796

University of Wisconsin - Madison Writing Center. (2006). *Writer's handbook: APA documentation style.* Retrieved April 23, 2007, from http://www.wisc.edu/writing/Handbook/DocAPA.html

Objectives

1. The student can apply a variety of research strategies for use in the elementary, middle grades, and/or secondary classroom, or with professionals in the field. Reflective decision making, a process involving reading, reflecting, and responding, will be applied by the student to evaluate ongoing research techniques, procedures, and materials, in order to become a reflective practitioner.
2. The student will select or design surveys and/or rubrics for data collection in the content area.
3. The student will understand current issues in the content area, including current research methods, materials, professional development and grant opportunities, and programs suitable to all learners, from exceptional populations to diverse ethnic and cultural groups.
4. The student will demonstrate the ability to connect new learning with prior knowledge and skills through a case study conducted during the Induction Experience (Educ 596) or the Professional Teaching Experience (Educ 591).

Requirements

1. Select a case study option:
   a. Implementation of the project designed in Educ 500 as your case study. Include modifications to the project, if necessary, based on knowledge gained since the completion of Educ 500.
   b. Plan to use one of your learning assessments from your first or second placement as your case study.
   c. Design a new project of your own choosing.

2. **Prior to data collection, complete the REQUIRED process for UTC's Institutional Review Board For the Protection of Human Research Subjects (http://www.utc.edu/~instrb/ or http://www.utc.edu/Administration/InstitutionalReviewBoard/). Request either an Exemption from IRB Review (Form A) if your sample includes only adults, or an Expedited Review (Form B), if your sample includes children. Form C must be completed at the end of the study; I will send that electronically. Review the information and forms on the IRB Web site for additional details. There are sample forms posted on Blackboard. An Exemption requires approximately 1 week to process. An Expedited Review may require several weeks to process. (Full board approval is required if there is more than minimal risk to the subject.) Any updates to the IRB process will be followed. Submit all documents to me ELECTRONICALLY through the digital drop box on Blackboard. I will send the proposal to Dr. John Freeman, Graduate Studies Division Department Head, and copy it to you, after approving your documents for submission. You must receive approval for your project from Dr. Freeman and/or the IRB Committee. Use only the versions of the documents that I have copied to you.**

   The following statement must appear on Form B, in the Risks section (modify for Form A):

   There are no risks to students as the research methods are traditional educational practices. Students may discontinue their participation in the project, at any time, without penalty.

   The following statement must appear on Form B, in the Privacy section (modify for Form A):

   Data will be anonymous and confidential, and results will be reported as group scores and trends.

   Also include a statement, similar to the following:

   All data will be paired by name and random code number, and the names will be removed after the documents have been sorted for each student. I will store all records, including consent forms, for 7 years, and then destroy all records.

Your instrument(s), consent form, and/or assent form MUST contain the following statement:

THIS PROJECT HAS BEEN REVIEWED BY THE INSTITUTIONAL REVIEW BOARD FOR THE PROTECTION OF HUMAN SUBJECTS AT THE UNIVERSITY OF TENNESSEE AT CHATTANOOGA.

Your consent and assent forms must include contact information for Dr. McAllister and Dr. Freeman, and must contain an option for the participant to discontinue participation as a research subject with no penalty. (Students are still required to complete course work.)

> Participation in this study is voluntary. You may discontinue your participation in the project at any time. Your decision whether or not to participate in the project or to withdraw from the project at any time will in no way affect your academic standing in this course. If you do choose to participate in the study, your participation will be completely anonymous. No one reading the results of the research will be able to identify you. (Reword "you" as "the student," etc., for the parental consent form.)
>
> If you have any questions about the project, you may contact me at xxx-xxx-xxxx, Dr. Deborah McAllister, project advisor, at 423-425-5376, or the Department Head of the Graduate Studies Division at The University of Tennessee at Chattanooga, Dr. John Freeman, at 423-425-5446.

You must include a memo (preferably, an email attachment) from the school principal that you have permission to carry out the project.

If there is evidence of prior research that you have done or evidence stated in the literature for your project, place that on the IRB approval form (a sentence or two). If not, cite the HCDE or other standards that are addressed by your project so the IRB members know why you are teaching/investigating the topic.

Check the IRB's Review Status link and your email account for updates on your proposal. Send a copy of any correspondence to me. I will submit any revisions, after discussing them with you.

3. Implementation of the project will be completed during the Induction Experience (Educ 596) or the Professional Teaching Experience (Educ 591). Implementation **cannot** occur prior to IRB approval.

4. Completion of the written project, **in APA style**. Include the following elements, each of which should be centered at the top of that section of the paper (not italic, not bold; see p. 113 in the APA style manual, and the sample headings document posted on Blackboard):

a. Introduction to the Problem. Why was this topic selected for study? Is this topic a current national, state, or local issue? Is this topic a staple of the curriculum in your field? Etc.

b. Review of Literature. Use at least five refereed sources. The online Education Resources Information Center (ERIC) advanced search should be used to locate references in educational journals and documents. See ERIC (http://www.eric.ed.gov/) and/or select the link to the advanced search. **You must use a page number or a paragraph number for all direct quotes. All references should contain complete page numbers (not the first page only, as may be listed in online documents).**

c. Data Collection and Results. Describe data collection procedures. Provide results of the project, in narrative form and including a chart and/or graph to display the data collected. Analysis of results is from the perspective of higher order cognitive skills. Use descriptive statistical measures (mean, median, mode, frequency distribution, charts, graphs, etc.) for communication of project results. Charts and graphs are imported from Excel to Word and cited as figures (not tables). See Microsoft Excel [spreadsheet] software, used in Educ 575.

d. Conclusions and Recommendations. What generalizations, if any, can be made, based on the results of the case study? What is the consensus of your professional organization with regard to the problem studied? What recommendations would you make for teacher professional development? Is grant money available to support further research in this area? What role could be assumed by the use of technology in this area? **Please address all items in this section.**

e. Copies of the instrument(s) used for data collection. Place original instruments in individual appendices. Do not include published instruments from the Web, books, etc., but place a citation on the page that mentions an instrument and in the reference list.

5. Communication:
   a. Current email address registered with UTC for communication between student and instructor. The UTC email address will point to the email address you have on file. See http://itd.utc.edu/email/ for more details.
   b. Web access to check course announcements and post messages to the discussion forum on Blackboard a minimum of once per week. See http://bb2.utc.edu/.

6. All work is to be computer-generated and turned in through the Blackboard digital drop box. You may complete your project either on the Macintosh or Windows platform. Please use Microsoft Word and Microsoft Excel. If other software is to be used, please ask for approval. Keep a copy of your work on a hard drive or a disk so that it can be accessed, if needed. Reminder: You will need a student ID card to use the student computer lab in the University Center.

7. Please note:
   a. Ask another person to proofread your work for correct syntax and semantics before submitting it. You may post it to the Blackboard discussion forum.

b. The Writing Center is located in 119 Holt Hall. See http://www.utc.edu/~scribble/ for hours and information.
c. Case studies may be displayed at a professional meeting and/or gathered for a publication.

8. Previously published student papers:

McAllister, D. A., & Fritch, S. C. (Eds.). (2007). *Culminating experience action research projects, volume 8, part 1, spring 2006*. (ERIC Document Reproduction Service No. ED495484)

McAllister, D. A., & Fritch, S. C. (Eds.). (2007). *Culminating experience action research projects, volume 7, fall 2005*. (ERIC Document Reproduction Service No. ED495261)

McAllister, D. A., & Bothman, S. M. (Eds.). (2005). *Culminating experience action research projects, volume 6, fall 2004*. (ERIC Document Reproduction Service No. ED490689)

McAllister, D. A., & Bothman, S. M. (Eds.). (2005). *Culminating experience action research projects, volume 5, spring 2004*. (ERIC Document Reproduction Service No. ED490030)

McAllister, D. A., & Bothman, S. M. (Eds.). (2005). *Culminating experience action research projects, volume 4, fall 2003*. (ERIC Document Reproduction Service No. ED490668)

McAllister, D. A., & Moyer, P. S. (Eds.). (2003). *Culminating experience action research projects, volume 3, spring 2003*. (ERIC Document Reproduction Service No. ED481396)

McAllister, D. A., & Moyer, P. S. (Eds.). (2002). *Culminating experience action research projects, volume 2, fall 2002*. (ERIC Document Reproduction Service No. ED474071)

McAllister, D. A., Moyer, P. S., & Bothman, S. M. (Eds.). (2005). *Culminating experience action research projects, volume 1, spring 2002*. (ERIC Document Reproduction Service No. ED490720)

Grading rubric

Criteria	A	B	C	F
Project outline and IRB approval	Submitted online. Submitted for IRB approval; approval received.	Submitted online. Submitted for IRB approval; approval received.	Submitted online. Submitted for IRB approval; approval received.	Not submitted online. Not submitted for IRB approval, or IRB approval denied.
Instruments	Items appear to be reliable and valid for the case study.	Items appear to be reliable and valid for the case study.	Reliability or validity is questionable.	Reliability and validity cannot be defended.
Data collection and results	Narrative gives descriptive account of data collection and results, and higher order analysis of results; data chart and graph display results accurately and appropriately.	Narrative provides descriptive account of data collection and results, but analysis of results is weak; data chart and graph display results satisfactorily.	Narrative provides limited descriptive account of data collection and results; analysis of results is flawed; data chart and graph display results, but contain errors.	Neither narrative nor chart and graph convey the data collection procedures and results of the study.
Conclusions and recommendations	Provides a cohesive summary to the project; all recommendation areas addressed satisfactorily.	Provides a cohesive summary to the project; most recommendation areas addressed satisfactorily.	Summary lacks insight to the intent of the project; recommendation areas not completely addressed.	Conclusions do not reflect results; recommendation areas not completely addressed.
APA style	APA style elements present: headings, subject-verb agreement, citations, references, abbreviations, commas, semicolons, lists, tables, figures, appendices, etc.	APA style elements present, with minor errors.	Ideas are understandable; acceptable writing style, though not APA.	Written style is inconsistent; difficult to follow the flow of ideas.
Spelling and typographical errors	No spelling errors; minimal typographical errors; correct use of plural and possessive forms.	Spelling and typographical errors present.	Errors detract from quality of project.	Poorly written.
Completion time	All elements completed on time.	Major elements completed on time; some minor elements late.	Most major elements completed late; some or most minor elements	No time deadline.

			late.	
Communication	Open communication between student and instructor. Progress message posted to the discussion forum at least weekly.	Response time is less than once each week.	Response time is less than once in 2 weeks	Response time is less than once in 4 weeks.
Professional quality and usefulness	Previous and current suggestions, and modifications, fully incorporated into project outline; project is relevant to education.	Previous and current suggestions, and modifications, selectively incorporated into project outline; project is relevant to education.	Previous and current suggestions, and modifications, minimally incorporated into project outline; project is relevant to education.	Previous and current suggestions, and modifications, not incorporated into project outline; project has little relevance to education.
Represents graduate level work	Completed project is presented as a coherent whole.	All project elements present but project is not presented as a coherent whole.	One or more project elements missing; project is not presented as a coherent whole.	Major project elements missing; project is not presented as a coherent whole.

Week (Tentative course schedule, subject to change.)		**Assignment due**
1	Week of 08/20/07 (and prior meeting 04/24/07) M 08/20, Student teacher meeting; W 08/22, 1st placement begins	Check email account; access Blackboard. Educ 590 will meet 08/20.
2	Week of 08/27/07	Case study option selected; proposed outline posted to discussion forum. **Paperwork submitted for IRB approval. Instruments and letter of approval from school principal must be included with both Form A and Form B. Parental consent form and student assent form must be included with Form B. Participant consent form must be included with Form A.** Copy of IRB approval placed in my mailbox in Hunter 311, when received, if not sent by email.
3	Week of 09/03/07; Labor Day Holiday, M 09/03 (UTC/HCDE)	Begin case study work on introduction, review of literature, and instruments; place file in digital drop box for review and for a check of APA style.
4	Week of 09/10/07	Begin data collection, with IRB approval.
5	Week of 09/17/07	Case study work continues.
6	Week of 09/24/07	Case study work continues.
7	Week of 10/01/07; 1st placement ends (?)	Data collection is complete.
8	Week of 10/08/07; Fall break, M 10/08 – F 10/12 (HCDE)	Writing of case study.
9	Week of 10/15/07; Second placement begins (?)	Writing of case study.
10	Week of 10/22/07; Fall break, M 10/22 – Tu 10/23 (UTC)	Writing of case study.
11	Week of 10/29/07	Writing of case study.
12	Week of 11/05/07	Writing of case study.
13	Week of 11/12/07	Writing of case study.
14	Week of 11/19/07; Thanksgiving Holiday, W 11/21 – F 11/23 (UTC/HCDE)	Proofreading of case study.
15	Week of 11/26/07	**Completed case study due, Sa 12/01/07, 12:00 p.m. (noon)** **Case study assembled in a single file; placed in digital drop box.**
16	Week of 12/03/07; Second placement ends, M 12/03; Student teacher meeting, Tu 12/04	**Late case studies accepted.**

17 Week of 12/10/07; Th 12/13, Grades due, 12:00 p.m.; Su 12/16, Commencement, 2:00 p.m. **Late case studies accepted; not guaranteed to be graded by 12/13.**

APA style (general guidelines; use reverse indent)

1. Journal

Last name, Initials., & Last name, Initials. (year). Title of the article in lower case letters except first letter of the title and proper nouns. *Journal name, volume*(number), page number-page number.

Many, W., Lockard, J., Abrams, P., & Friker, W. (1988). The effect of learning to program in Logo on reasoning skills of junior high school students. *Journal of Educational Computing Research, 4*(2), 203-213.

2. Book

Last name, Initials., & Last name, Initials. (year). *Title of the book in lower case letters except first letter of the title and proper nouns.* Place of publication: Publishing Company.

Turner, T. N. (1994). *Essentials of classroom teaching elementary social studies.* Needham Heights, MA: Allyn and Bacon.

3. Software

Last name, Initials., & Last name, Initials. (year). *Title of the Software in Upper Case First Letters* [Computer software]. Place of publication: Publishing Company.

Microsoft Corporation. (1996). *Encarta 97 Encyclopedia* [Computer software]. Redmond, WA: Author.

In example 3, the author and the publishing company are the same, so the word 'Author' is used.

4. Online source

Last name, Initials., & Last name, Initials. (year). *Title of the Web site in lower case letters except first letter of the title and proper nouns*. Retrieved today's date, from complete URL

National Council of Teachers of Mathematics. (2000). *Principles and standards for school mathematics*. Retrieved April 23, 2007, from http://standards.nctm.org/

In example 4, I omit the period '.' at the end so it will not be confused in the address. Others choose to leave one space, then place the period at the end of the URL.

5. ERIC document

Last name, Initials., & Last name, Initials. (year). *Title of the paper in lower case letters except first letter of the title and proper nouns.* Paper presented at name, place, and date of conference, or other relevant information. (ERIC Document Reproduction Service No. XXXXXX)

McAllister, D. A., Mealer, A., Moyer, P. S., McDonald, S. A., & Peoples, J. B. (2003). *Chattanooga math trail: Community mathematics modules, volume 1*. Washington, DC: U.S. Copyright Office. (ERIC Document Reproduction Service No. ED478915)

Professional Organizations (examples)

American Council on the Teaching of Foreign Languages. (n.d.). Retrieved April 23, 2007, from http://www.actfl.org/
Council for Exceptional Children. (2007). Retrieved April 23, 2007, from http://www.cec.sped.org/
International Reading Association. (2007). Retrieved April 23, 2007, from http://www.reading.org/
International Society for Technology in Education. (n.d.). Retrieved April 23, 2007, from http://www.iste.org/
National Art Education Association. (2007). Retrieved April 23, 2007, from http://www.naea-reston.org/
National Association for Music Education. (n.d.). Retrieved April 23, 2007, from http://www.menc.org/
National Association for the Education of Young Children. (n.d.). Retrieved April 23, 2007, from http://www.naeyc.org/
National Council for the Social Studies. (n.d.). Retrieved April 23, 2007, from http://www.ncss.org/
National Council of Teachers of English. (2007). Retrieved April 23, 2007, from http://www.ncte.org/
National Council of Teachers of Mathematics. (2007). Retrieved April 23, 2007, from http://www.nctm.org/
National Middle School Association. (2007). Retrieved April 23, 2007, from http://www.nmsa.org/
National Science Teachers Association. (2007). Retrieved April 23, 2007, from http://www.nsta.org/

Rubrics (examples)

Chicago Public Schools. (2000). *The rubric bank.* Retrieved April 23, 2007, from http://intranet.cps.k12.il.us/Assessments/Ideas_and_Rubrics/Rubric_Bank/rubric_bank.html
Chicago Public Schools. (2000). *How to create a rubric.* Retrieved April 23, 2007, from http://intranet.cps.k12.il.us/Assessments/Ideas_and_Rubrics/Create_Rubric/create_rubric.html
LessonPlanZ.com. (2005). Retrieved April 23, 2007, from http://lessonplanz.com/ (use 'rubric' as a search term)
South Dakota State University. (n.d.). *Rubric template.* Retrieved April 23, 2007, from http://edweb.sdsu.edu/triton/july/rubrics/Rubric_Template.html
Teachnology. (n.d.). Rubric, rubrics, teacher rubric makers. Retrieved April 23, 2007, from http://teachers.teach-nology.com/web_tools/rubrics/
The Landmark Project. (n.d.). *Rubric construction set.* Retrieved April 23, 2007, from http://landmark-project.com/classweb/rubrics/4x4rubric.html

Surveys (examples)

The International Consortium for the Advancement of Academic Publication. (2007). *Resources for methods in evaluation and social research.* Retrieved April 23, 2007, from http://gsociology.icaap.org/methods/

University of Southern Indiana Sociology Department. (2007). *Social research and statistical links.* Retrieved April 23, 2007, from http://www.usi.edu/libarts/socio/stats.htm

Bibliography

American Association for the Advancement of Science. (1993). *Benchmarks for science literacy*. Retrieved April 23, 2007, from http://www.project2061.org/tools/benchol/bolintro.htm

Association of College and Research Libraries. (2005). *Information literacy competency standards for higher education*. Retrieved April 23, 2007, from http://www.ala.org/acrl/ilstandardlo.html

Creswell, J. W. (2005). *Research design: Planning, conduction, and evaluating quantitative and qualitative research*. Upper Saddle River, NJ: Pearson Education, Inc.

Fogarty, R. (1995). *The mindful school: How to integrate the curricula awareness program.* Palatine, IL: IRI/Skylight Training and Publishing, Inc.

Freiberg, H. J., Driscoll, A., & Stetson, R. H. (1992). *Universal teaching strategies.* Boston, MA: Allyn and Bacon.

Gay, L. R., & Airasian, P. (2003). *Educational research: Competencies for analysis and applications* (7th ed.). Upper Saddle River, NJ: Pearson Education, Inc.

Hamilton County Department of Education. (2005). *HCDE standards and benchmarks*. Retrieved April 23, 2007, from http://www.hcde.org/standards/stindex.html

Johnson, A. P. (2005). *A short guide to action research* (2nd ed.). Boston, MA: Pearson Education, Inc.

Leedy, P. D., & Ormrod, J. E. (2005). *Practical research: Planning and design*. Upper Saddle River, NJ: Pearson Education, Inc.

Martin, D. B. (1999). *The portfolio planner.* Upper Saddle River, NJ: Prentice-Hall, Inc.

McAllister, D. A. (2006). *Faculty page – McAllister*. Retrieved April 23, 2007, from http://oneweb.utc.edu/~deborah-mcallister/

McMillan, J. H., & Schumacher, S. (2001). *Research in education* (5th ed.). New York, NY: Addison Wesley Longman, Inc.

Menges, R. J., & Weimer, M. (1996). *Teaching on solid ground: Using scholarship to improve practice.* San Francisco, CA: Jossey-Bass Inc.

Mills, G. E. (2003). *Action research: A guide for the teacher researcher* (2nd ed.). Upper Saddle River, NJ: Pearson Education, Inc.

Mills, S. C., & Roblyer, M. D. (2003). *Technology tools for teachers: A Microsoft Office tutorial.* Upper Saddle River, NJ: Pearson Education, Inc.

National Council of Teachers of Mathematics. (2000). *Principles and standards for school mathematics*. Retrieved April 23, 2007, from http://standards.nctm.org/

National Research Council. (1999). *How people learn.* Washington, DC: National Academy Press. (see also http://www.nap.edu/readingroom/books/howpeople1/notice.html)

National Research Council. (1995). *National science education standards*. Retrieved April 23, 2007, from http://www.nap.edu/readingroom/books/nses/

Novak, J. D., & Gowin, D. B. (1984). *Learning how to learn.* New York, NY: Cambridge University Press.

Palloff, R. M., & Pratt, K. (2001). *Lessons from the cyberspace classroom: The realities of online teaching.* San Francisco, CA: Jossey-Bass Inc.

Provenzo, E. F., Jr. (2002). *The Internet and the World Wide Web for teachers.* Needham Heights, MA: Allyn & Bacon.

Reed, A. J. S., & Bergemann, V. E. (2001). *A guide to observation, participation, and reflection in the classroom* (4th ed.). New York, NY: McGraw-Hill.

Roblyer, M. D. (2003). *Integrating educational technology into teaching* (3rd ed.). Upper Saddle River, NJ: Pearson Education, Inc.

Roblyer, M. D. (2003). *Starting out on the Internet: A learning journey for teachers* (2nd ed.). Upper Saddle River, NJ: Pearson Education, Inc.

Tennessee Department of Education. (n.d.). *Curriculum standards*. Retrieved April 23, 2007, from http://www.state.tn.us/education/ci/standards/

Thomas, R. M. (2005). *Teachers doing research: An introductory guidebook*. Boston, MA: Pearson Education, Inc.

Treffinger, D. J., Hohn, R. L., & Feldhusen, J. F. (1979). *Reach each you teach.* Buffalo, NY: D. O. K. Publishers, Inc.

Tuckman, B. W. (1999). *Conducting educational research* (5th ed.). Fort Worth, TX: Harcourt Brace & Company.

U.S. Department of Education, Institute of Education Sciences. (n.d.). *Education resources information center*. Retrieved April 23, 2007, from http://www.eric.ed.gov/

Items available in Lupton Library

Campbell, L., Campbell, B., & Dickinson, D. (1996). *Teaching and learning through multiple intelligences.* Needham Heights, MA: Allyn and Bacon.

Haladyna, T. M. (1997). *Writing test items to evaluate higher order thinking.* Boston, MA: Allyn and Bacon.

Krulik, S., & Rudnick, J. A. (1995). *The new sourcebook for teaching reasoning and problem solving in elementary schools.* Boston, MA: Allyn and Bacon.

Ross, S. M., & Morrison, G. R. (1995). *Getting started in instructional technology research.* Washington, DC: Association for Educational Communications and Technology.

Silberman, M. L. (1996). *Active learning: 101 strategies to teach any subject.* Boston, MA: Allyn and Bacon.

Wilson, B. G. (Ed.). (1996). *Constructivist learning environment: Case studies in instructional design.* Englewood Cliffs, NJ: Educational Technology Publications.

Losing Battles: How Do Gifted and Advanced Students Fare in Collaborative Learning Groups?

Kevin Aslinger

Education 590, Fall 2007

The University of Tennessee at Chattanooga

The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149) has approved this research project 08-063.

Introduction to the Problem

It seems that everyone is talking about groups. Business people call it teamwork or self-guided work. Education and healthcare professionals call it collaboration. Even the military uses it in their Special Forces units. Group work exists in many other environments and forms, but all types share one thing: They are composed of individuals working toward a common goal or goals. Since the early 1980's, educators have introduced more and more group work into the classroom. Since then, group work has acquired many names: cooperative education, cooperative learning, peer learning, and peer grouping. It has also become a prominent instructional strategy in many schools. Many educators view it as a panacea for academic and social issues in schools. However, other educators doubt that every student's interests are served by cooperative learning and are particularly worried about how some students in heterogeneous cooperative learning groups fare. These groups contain a mix of different types of learners which include high', average', and low-achieving learners. Furthermore, educators are particularly worried about gifted learners and high achieving learners.

What is the fate of the gifted or high-achieving student in a heterogeneous, cooperative learning group? Gifted students have faced many challenges in recent years. Cuts in funding have meant the elimination of pull-out and "gifted" programs. Now, gifted students are being used, some even say exploited, in peer-learning groups (Ross & Smyth, 1995). The children are most often grouped heterogeneously with lesser-achieving children. The groups are given a common goal to work toward. Ideally, this goal is achieved through the equal work of the gifted child and the other group members. Gifted or high-achieving students are typically grouped with two "average" students and one low-achieving student. Some educators feel this arrangement

puts an undue burden on the gifted child and high-achieving child. Others feel that these students gain both academically and socially because of their membership in peer learning groups.

Dozens of studies have been conducted. Most have been conducted in primary or middle schools and have concentrated on math and science. A few have focused on cooperative learning in secondary schools. Even fewer have focused on English at the high school level. Faced with the mixed messages of researchers, as well as research that is not specifically geared to high school English (my field), I resolved to ask a few questions of my own, and, hopefully, find answers to these questions by conducting a study. The purpose of this study is to find out how gifted and high-achieving students fare in heterogeneous, cooperative learning groups. All references to any type of grouping in this project will refer to heterogeneous, cooperative learning groups, unless homogeneous groups are specifically cited.

Research Questions

1. When gifted or academically-advanced children in secondary English classes take part in frequent, cooperative peer groups, will their academic advancement be helped or hindered?
2. Do these same children feel that they are helped or hindered by their roles in said groups?
3. Do these children enjoy heterogeneous peer grouping or would they prefer to be in a group of like-performing students?
4. Do these children feel that they do more than, less than, or an even portion of the group's work as do other students?

Review of Literature

A study of the research on cooperative learning is an exercise in opposites. A majority of the research claims incredible benefits for everyone. The "believers" have done studies and

gathered anecdotal information which demonstrates how gifted, high, average, and low achievers all benefit from peer grouping. The “unbelievers” have done studies and gathered information, as well, but their findings oppose the believers. They have found that gifted and high achievers are harmed, or, at best, don’t gain from cooperative learning. Who should educators believe? Delving deeper into the research may yield the reader some answers, or at least some insight into the difficulties surrounding the use of cooperative learning with gifted and advanced students. In order to more closely examine the issues, as they pertain to gifted and advanced learners, we must first look at cooperative learning, as a whole.

Overview

What is cooperative learning? As stated before, the term includes other terms such as peer grouping, collaborative learning, and peer tutoring. Cooperative learning has been widely defined. To Ramsay and Richards it “is an instructional method in which small, mixed ability groups work toward accomplishing a common goal” (1997, p. 161). Slavin, one of the greatest proponents of heterogeneous grouping, states that all forms of cooperative learning involve “students in small groups who help one another learn.” He also insists that students work together and are responsible for “one another’s learning as well as their own” (Slavin, 1991b, p. 72).

Serious research on cooperative learning began in the 1970’s (Slavin, 1991b). Since then, a great deal of research has been done on its effectiveness in Grades 3-9 and 10-12. Less study has been conducted on other grades. The majority of the research has centered on well-defined methods such as Student Team Learning, Jigsaw, Learning Together, and Group Investigation. Much less work has been done on the less formal methods that many teachers use in real-world

classrooms (Slavin, 1991b). A majority of the research points to great benefits, at least for low- and average-ability students.

There are many proponents of cooperative learning and they cite various advantages to using it over traditional teaching strategies. Slavin is one of the greatest proponents of cooperative learning. He has conducted research on the topic and is often cited by those for and against peer grouping. Also, he believes cooperative learning works for all students (1991b). Researchers think cooperative learning works because students understand explanations from other students better than they would understand explanations from teachers. In a meta-analysis of many other studies, Slavin found that cooperative learning was successful for all when the teaching strategies included a component that held the entire group accountable and had clear goals for the whole group (1991b). Based on his results, he claimed that students experienced increases in higher-order thinking skills, accepted inclusion and students of other races more frequently, and were better prepared for the workforce (1991b; Greenwood, Carta, & Hall, 1988; Entonado & Garcia, 2003). Slavin also stated that his analysis showed that students had "increased feelings of individual control, cooperativeness, and altruism" (1991b, p. 75). Others agree with his claims and add additional benefits, including increased motivation, academic performance, self-esteem, and performance for gifted students, as well as decreased dependence on teachers and decreased negative competition (Wood, McCormack, Lapp, & Flood 1997; Greenwood et al., 1988; Greenwood, Delquadri, & Hall, 1989). Slavin's meta-analysis backs up these amazing claims. Of the 70 studies he examined, 67% showed positive achievement gains and 61% showed significant academic gains over control groups that used no collaborative learning (1991b). Other researchers have found similar gains (Wood et al., 1997; Greenwood et al., 1988; Ramsay & Richards, 1997).

The list of benefits found in the research continues. Greenwood et al. also found that peer tutoring (a form of cooperative learning) increases the number of friends that students have across socioeconomic lines (Greenwood et al., 1988). Furthermore, teachers claim to see improved attitudes in their students when peer-grouping strategies are predominant. There is also a decrease in discipline problems (Entonado & Garcia, 2003; Greenwood et al., 1988). Slavin states, "studies show that people who cooperate learn to like one another" (1991b, p. 76). Yet another plus is that students who are not socially accepted often get a second chance because of peer learning and are more likely to be accepted after engaging in cooperative learning activities (Entonado & Garcia 2003). Finally, use of cooperative learning over a long period of time shows amazing, long-term academic gains for students (Joyce, 1991; Entonado & Garcia, 2003).

There are several grouping strategies that teachers can use. Teachers often use Slavin's model and develop groups that contain one high achiever, two medium achievers, and one low achiever (1991b). Many educators make an effort to include a high achiever in each group. Teachers often leave students in the same group for an entire semester (Ramsay & Richards, 1997). Some types of cooperative learning envision the student teaching students in a teacher's role. In this situation, some students are actually surrogate teachers to lesser-achieving students, developing a teacher-student relationship between tutor and tutee (Greenwood et al., 1988). In other grouping schemes, such as Group Investigation and Learning Together, larger groups are organized to accomplish a task for which they will receive a group grade (Slavin, 1991b). Although teachers are encouraged to subdivide group work to individuals, based on academic level, many educators believe that rewards should be based on the work of other students (Greenwood et al., 1988). Greenwood et al. also recommend that groups compete for rewards; they believe that competition spurs achievement (1988).

An alternative to group accountability is the growing trend towards stressing individual accountability in cooperative learning. Some educators have come to believe that groups should learn together, but be held responsible for only their own performance (Slavin, 1991b). For example, in the grouping strategy, Cooperative Reading Activity, students discuss readings together before taking individual tests for their learning evaluation (Wood et al., 1997). Proponents of individual accountability say it allows teachers to assign a wider range of work over varying academic levels within the same class (Slavin, 1991b). Methods such as Jigsaw II and Team Assisted Learning (TAL) have often been used by teachers with this intent (Greenwood et al,. 1988). A similar strategy used in elementary schools is Class Wide Peer Tutoring (CWPT). In CWPT, students are paired in highly-structured roles which are meant to promote learning while encouraging individual accountability (Greenwood et al., 1989). Another successful strategy that stresses individual accountability is Student Team Learning (STL). In STL, and variations such as Team Games Tournament (TGT), students' quiz scores are compared to their own previous performances and are not based on a group grade. Students take individual quizzes, but study together. They cannot help each other on quizzes or tests. The key concept is that students help each other prepare and learn. STL has had great results in subjects including language arts and reading comprehension (Slavin, 1991b). The most important thing, says Slavin, is that students are held accountable for their own performance, and that students are grouped for concept attainment, not for work for the sake of work (Slavin, 1991b). This is clearly contradictory to the idea of group accountability held by Greenwood et al.

Which is better, group or individual accountability? Among researchers, there is great deal of praise for individual accountability and scorn for group accountability. Randall calls group accountability the "greatest weakness" (p. 15) of peer learning, and Slavin condemns any

use of cooperative learning without it (Randall, 1999; Slavin, 1991a). Randall warns against basing the success of a group on the actions of all members (1999). Yet, in Slavin's meta-analysis of cooperative learning research, only 4 out of 23 studies without individual accountability showed positives for all students (1991b).

What are the keys to successful cooperative learning in the general student population? Obviously, individual accountability could be viewed as one component. Small groups seem to get better results than larger ones (Grambo, 1997; Entonadoa & Garcia, 2003). Wood stresses the importance of well-defined groups and individual goals (Wood et al., 1997; Ross & Smyth, 1995; Slavin, 1991b). Entonado and Garcia also stress the importance of using clear rules and highly-structured activities (2003; Wood et al., 1997; Matthews, 1992; Ross & Smyth, 1995). Students should be told, in advance, how they will be evaluated (Entonado & Garcia, 2003). It's also important that students realize that they are to work together, not compete (Grambo, 1997). Closely linked is the importance of having every student involved (Wood, 1997; Ross & Smyth, 1997). Involvement is the responsibility of the teacher, who must ensure that an atmosphere of inclusiveness and equality is promoted within the groups (Entonado & Garcia, 2003; Ross & Smyth, 1995). An essential part of this equality is the teacher's role of establishing a class where negative comments about other students are not tolerated (Wood et al., 1997; Ross & Smyth, 1995). Teachers can also use activities which promote student interest and that draw on individual skills of different team members (Matthews, 1992). It is important to let students know that their learning is interdependent, and that, if they all work together, then everyone can succeed (Ross & Smyth, 1995). Slavin sums up the success of cooperative learning strategies with two tenets: group goals and individual accountability (1991b).

Some educators would add student and teacher preparation and training to the list of elements required in successful cooperative learning. Researchers believe it is important that students be trained in helping skills and communication skills before they ever participate in peer learning (Alvermann, 1996; Ross & Smyth, 1995; Webb & Farivar, 1994; Wood et al., 1997). Additionally, Webb and Farivar believe students should be trained to give elaborative answers—that is, answers that explain—rather than just a simple answer. In studies they conducted, students fared far better when elaborative responses were used because elaborative help strengthened previous learning for tutors and tutees. According to their research, only this type of cooperative learning helps tutors and tutees in learning groups (Webb & Farivar, 1994). Teacher preparation and training are also crucial for successful cooperative learning. Furthermore, teachers should be trained in grouping strategies, and continue to receive training, as long as they use cooperative learning in their classrooms (Entonado & Garcia, 2003; Ross & Smyth, 1995).

Some educators stress flexible grouping as the key to successful cooperative learning (Joyce, 1991; Wood et al., 1997). Flexible grouping strategies include moving students periodically from group to group, using heterogeneous and homogeneous academic achievement grouping, grouping by interest, and using other grouping methods to provide variety to, and avoid boredom for, students (Matthews, 1992; Wood et al., 1997). Studies have shown that students in classes that use flexible grouping strategies have better attitudes toward the subjects they are studying (Ramsay & Richards, 1997). Even Slavin, champion of heterogeneous grouping, admits that homogeneous grouping may benefit students by providing variety (1991a). Joyce agrees, and Randall recommends grouping students by interest, not academic level (Joyce, 1991; Randall, 1999). Many advocates of cooperative learning also stress that group learning is

just another teaching strategy, and should be used in conjunction with individual work (Wood et al., 1997).

How Advanced Learners Fare

Having examined cooperative learning as a whole, we can now hone in on how this type of education affects gifted students and high academic achievers. It is here that the real battles begin. There is ample evidence and argument to both support and oppose the use of heterogeneous cooperative learning for these groups of students. Both sides have research and opinions to back their claims.

Some researchers extend the benefits of cooperative learning to include gifted and advanced students. They also cite other benefits for advanced students. Some, like Slavin, claim that, not only will advanced students learn, they will learn more than they would have learned without being in a learning group (1991a; 1991b; Ramsay & Richards, 1997). In a study of Grades 2-5 students in two suburban schools, Slavin found that the top one-third of achievers gained more academically than the top one-third at a control group school where no cooperative learning was used. He argues that homogeneous (like-achieving) groups are not necessary for achievement gains and show no significant advantage over heterogeneous groups (1991a). Other research has shown that high-level students produce a greater volume of work when they participate in cooperative learning groups (Entonado & Garcia, 2003). Joyce claims that the goals of cooperative learning mirror goals that gifted educators specifically cite as goals for high achievers. These include building inductive thinking, personal analysis and internalization of ideas, increased understanding of metaphors and analogies, rounding of student knowledge, and education in democratic processes and scientific inquiry (Joyce, 1991). Additionally, the social

status of very high achievers may increase because of their participation in grouping strategies (Ross & Smyth, 1995).

Researchers and educators also cite the theory that those who teach, learn better and more (Randall, 1999). Evidence demonstrates that teachers learn because they must organize thoughts and elaborate in order to convey meaning. These two processes make learning related material easier and reinforce existing knowledge (Bragh & Schul, 1980; Webb & Farivar, 1994). Verbalized thoughts are more likely to be remembered (Bragh & Schul, 1980). Students are also forced to confront their own beliefs before they can express them (Webb & Farivar, 1994). In a survey of high achievers, students felt that they had learned more than they otherwise would have (Ross & Smyth, 1995).

Other researchers cite heterogeneous grouping as an opportunity for advanced students to learn how to lead (Ross & Smyth, 1995). In some studies, gifted children have been encouraged to take over a group and provide positive reinforcement and elaboration for lower achievers (Greenwood et al., 1988). Strong gifted leadership leads to better performance for the whole group (Ross & Smyth, 1995).

Opposing these positive views of cooperative learning are just as many educators and researchers. They find many reasons to condemn the learning strategy. Many fear that cooperative learning “does not address the needs and talents of the gifted” and of high achievers (Ramsay & Richards, 1997, p. 161). The highly structured environments, and lack of student involvement in grouping, go against the needs of advanced students to have “flexibility, mobility, variety, and independence” (p. 164). Many advanced students feel disadvantaged and lose drive in heterogeneous groups (Entonado & Garcia, 2003). And yes, advanced students do more work in groups, but that is because they are asked more often to provide answers (Webb &

Farivar, 1994). Advanced students may be academically advantaged, but they may not have the skills to give good explanations; just because a child is smart, doesn't mean he or she is a good teacher (Matthews, 1992).

Time is also a concern for advanced students. In assignments involving routine tasks, high academic achievers found it easier to do the work themselves, rather than wait for all group members to complete a portion of the work (Slavin 1991b; Matthews, 1992). Peer learning is also bad for advanced students because it emphasizes the basics, which these students have already mastered (Ramsay & Richards, 1997). Too much time spent reviewing the basics may actually inhibit deeper learning (Bragh & Schul, 1980). For these reasons, some educators feel cooperative learning should only be used sparingly and for routine tasks. These teachers feel that peer grouping used only for reviewing, not learning, will benefit advanced students (Randall, 1999; Wood et al., 1997). A further reason to condemn cooperative learning is that it discourages high achievers to ask questions, since they are expected by their groups to always know the answers (Ross & Smyth, 1995).

There are more reasons to oppose cooperative learning for the advanced students. Some educators blame its rise for the decline of individual gifted programs (Slavin 1991a; Ross & Smyth, 1995). Teachers and parents are afraid that their advanced child may be "exploited" or used as a "surrogate teacher," as, indeed, is sometimes the case (Randall, 1997; Ross & Smyth, 1995; Slavin, 1991b). Slavin, himself, admits that some specific types of cooperative learning, like Learning Together, may be bad for gifted students (1991b). The evidence has left some people feeling that cooperative learning may have a "Robin Hood" effect on gifted and advanced learners. Indeed, some studies have demonstrated that struggling students tend to bring down the achievement of other students. It is the belief of these educators that a reliance on cooperative

learning moves all students towards the middle—in effect, a move toward mediocrity (Ross & Smyth, 1995).

Some educators also oppose using advanced students as leaders (Ross & Smyth, 1995). Is being a teacher too much for a student? Yes, answer critics (Matthews, 1992). Child-teachers complain that they have to spend too much time teaching the same things over and over again (Randall, 1999). Gifted kids are often not sensitive to the needs of "less able" peers. For example, they may keep reusing the same explanation, even if other students don't understand it (Ross & Smyth, 1995). Additionally, Randall implies that cooperative learning is useless without the participation of advanced learners (1999).

How do advanced students *feel* about cooperative learning? Studies show that average students like cooperative learning more than advanced students (Ramsay & Richards, 1997). Feldhusen, Dai, and Clinkenbeard (2000) found that gifted students sometimes like cooperative learning, but only when they have specific tasks that they find challenging. There is evidence that advanced students like cooperative learning when it is homogeneous, that is, when they are grouped with like achievers (Matthews, 1992). With heterogeneous grouping, the majority of research shows advanced students dislike it. Many are cynical about grouping and most prefer to work alone (Feldhusen et al., 2000; Randall, 1999). In fact, studies show that gifted students would rather compete than collaborate. They have a better attitude about themselves and their work when competing (Feldhusen et al., 2000). Slavin admits that gifted students feel taken advantage of (1991a). High achievers are often frustrated with lesser achievers and with what they view as repetition of material already covered (Entonado & Garcia, 2003; Ramsay & Richards, 1997; Matthews, 1992). Advanced students are also concerned about equality. They feel that they have extra work loads in groups, and are forced to carry the slackers, for fear of

harming their own grade (Matthews, 1992; Feldhusen et al., 2000; Ramsay & Richards, 1997). They often feel they are being held back from their own learning and that group evaluations are unfair (Entonado & Garcia, 2003; Greenwood et al., 1988; Matthews, 1992; Ross & Smyth, 1995).

Finally, cooperative learning is criticized by advocates for gifted and high achievers based on the complex group dynamics that occur in these groups. More research needs to be done on social dynamics that exists in these groups (Alvermann, 1996). Some research indicates that groups can only be successful if group dynamics encourage equal participation, a quality that is notoriously hard to achieve (Webb & Farivar, 1994). There is also evidence that students who are weak in a subject are socially subjugated, and that low-ability students are dominated by high-ability students. This finding supports the thesis that group leadership may be too much responsibility for advanced students (Ross & Smyth, 1995). However, group leadership doesn't always come from the smartest student. In fact, advanced students are sometimes marginalized themselves because of popularity structures (Alvermann, 1996). In other cases, high achievers feel social pressure to provide all the answers. A student's need to fit in cannot be overestimated (Ross & Smyth, 1995; Feldhusen et al., 2000; Alvermann, 1996)

Supporters of cooperative learning for all students counter these arguments by stating that teachers of gifted and advanced students should be fighting for, not against, cooperative learning in the classroom (Slavin, 1991a). Supporters say that critics need to understand that there are many different types of cooperative learning, and that not all are harmful to advanced learners (Joyce, 1991; Slavin, 1991a). Slavin says that concerns about cooperative learning are based on "misconceptions or experiences with inappropriate forms of cooperative learning" (1991a, p. 68). In response to critics who say that advanced students are being held back because of grouping,

Slavin says that students would have been exposed to the same information from a teacher who was addressing the average learner, as the information that they are exposed to in groups (1991a). He also stresses that cooperative learning can be great for all students if they are given assignments that include group goals and individual accountability, and if teachers follow through by monitoring students for appropriate behavior in their groups (1991b).

Conclusion

The research is in—and it is inconclusive. On one side is a group of educators who claim cooperative learning is great for all students, including advanced and gifted learners. On the other side is a group that feels just as strongly that cooperative learning is bad for advanced and gifted students. Each side has ample research to support their opinions. Which side is right? I will conduct a research project on my English classes to find out how heterogeneous grouping affects my students.

Data Collection and Results

Methodology

Participants

I conducted this study in a 10th grade English class with one block of students. The class contained a variety of students in high, medium, and low achievement areas. One group of high-achieving students was placed in a homogeneous group. Other high-achieving students were placed in heterogeneous groups, with students of other achievement levels.

The class contained 25 students. Since the number of gifted students was limited, the study included both gifted and high-achieving students. For the study, each student was classified as advanced, or other. The classification was based on the state classification as "gifted." Additional students were chosen as part of the advanced group based on grade

achievement, thus far, in English 10. My cooperating teacher assisted in the selection of the students, based on his knowledge of their abilities and performance. The total number of advanced students studied in this research project was seven students.

Instruments

Before the study began, students completed a questionnaire (see Appendix A) regarding their feelings about, and role in, heterogeneous cooperative groups. Students were told that their answers would remain confidential and would, in no way, be shared with other students.

The students also completed a pre-test. This test was a graphic organizer involving the structure of Shakespeare's plays as the concept relates to *Macbeth*. All students in class had read the play, but the concepts had not yet been explored. After the study, students took the test again. This post-test is measured against the pre-test for learning outcomes.

During the study, I used a checklist of student behaviors (see Appendix B) which I updated every 5 minutes for each group. The checklist was designed to observe the behaviors of only the students being studied, and not the other students in the groups.

Procedures

Before any research was conducted, I first received approval from my research professor, my cooperating teacher, my school administrator, and the IRB board. I then met with the prospective students. Students and their parents agreed in writing to the study. All students that I had hoped would participate did.

Several days before the cooperative learning activity that I studied was performed, students completed and returned the questionnaires about cooperative learning. Students also completed a pre-test designed to measure their knowledge of the structure of *Macbeth*.

On the first day of the study, students were grouped into cooperative learning groups for the Jigsaw activity. Students were placed in groups of five students. Group A contained three advanced students and one average student. This is the “control” group. Class size did not allow for a completely homogenous group of high achievers while still permitting placement of one advanced student in each heterogeneous group. Groups B, C, D, and E each contained one advanced student and four students of either medium or low achievement.

Students were numbered off within their groups. The students then went to their randomly assigned expert tables. Each table was given a packet of information that related to Shakespeare, his plays, or *Macbeth* specifically. One packet in particular explored the structure of Shakespeare’s plays. This packet directly related to the pre- and post-test. Each expert group contained at least one advanced student.

Students were instructed to first code the text for the most important information. Students then discussed as a group which information was the most important to take back to their table. After this component was complete, students returned to their original table. Students were instructed to “teach” the other members of the original group all the information presented at the expert tables. Finally, students completed the graphic organizer post-test, which was identical to the pre-test.

Data Analysis

The questionnaire was designed to measure students’ feelings towards their role in cooperative learning groups. On the whole, students enjoyed working in groups and felt that their part in the group was important. However, most students felt taken advantage of and had mixed feelings about how much or little working in groups helped them academically.

Students generally had a good attitude toward group work. Almost all the students enjoyed working in groups (question 1). One student was unsure. Students also felt that their part in group work (question 2) was important. All students either “Agreed” or “Strongly Agreed.” Six of the seven students surveyed liked helping people in their group (question 3). Students also seemed to have a positive attitude about working in groups with students of various achievement levels. Five out of seven students, or 71%, liked working in groups with students of different levels of understanding (question 5). Two students did not like working with students of other levels. All the students surveyed also felt that their part in group work helped other students (question 7).

Despite these positive attitudes toward group work, these advanced students felt that their classmates were taking advantage of them (question 4). All but one student “Agreed” or “Strongly Agreed” to this statement. Only one student did not feel taken advantage of while working in groups. However, only one student felt that group work was holding them back (question 6). Four students did not feel they were being held back. Two students were unsure if group work helped or hindered their learning. Question 8 also dealt with how advanced students felt about their learning in heterogeneous groups. Four of the seven students believed that group work helped them learn more, one student felt he or she learned less, and two students were unsure (see Appendix C).

Observations of students during the study, using the Observed Behaviors Checklist, reinforced students’ opinions about helping other students. All the students were observed helping others repeatedly. In fact, this was the most observed behavior during the course of the study. Of the 19 times each student was observed, students were observed helping others an

average of 7 times. Only one student, student E, was observed helping other students less than 5 times during the 15 observations.

Students' opinions about being taken advantage of also were reinforced by the checklist. Four of the seven students were observed at least twice as being the only student working in their groups. Advanced students were, in effect, doing all the work for their groups during these time periods. However, three of the seven students were never observed as the only student working. It is unclear why this work transference happened to some students but not others.

More distressing than students working alone was their low level of engagement. All the advanced students appeared to be bored on at least one observation. Students C, D, and E were observed appearing bored seven, seven, and eight times, respectively. These students were bored on half the occasions they were observed. Interestingly, these students averaged only 4.6 incidents of helping fellow students. Were the students bored because they were not challenged by the work, or did the group dynamics hinder their engagement with their fellow students? In other words, were the students bored because they were unable to help the other students, or because they were uninterested in helping them? The course of the study was not designed to answer this question. (See Appendix D.)

The student pre-test and post-test was designed to measure student learning on one component of the Jigsaw. Students scored an average score of 63% on the pre-test. Student grades increased to an average of 90% on the post-test. The advanced students in Group A, the control group, scored an average of 92%. The advanced students who were placed with the other levels of students scored an average of 89%. The difference in scores between the two groups was three points. There is a small difference between the average scores of the students in the homogeneous control group and those who were placed in the heterogeneous groups. This

difference could be because the students in the homogeneous group better explained the concepts explored in the first part of the Jigsaw to each other. However, the difference in scores is not so large as to show a definitive advantage to students in these groups.

Conclusions and Recommendations

The questionnaire and Observed Behaviors log clearly demonstrate that most advanced students have a positive attitude towards cooperative learning groups. The students answered that they valued these groups, and their actions in groups, for the most part, reinforced their opinions. However, the students did not all appear challenged by the group work. The students who worked in the homogeneous advanced group did perform better, on average, than the heterogeneously-placed students. However, this less than 4% variance in average scores is not significantly large enough to answer the question of whether or not advanced students are hindered by their placement in heterogeneous groups.

Clearly, the subject of cooperative learning, as it relates to advanced students, is still a complex one. Cooperative education is strongly endorsed by all the major teaching organizations, and at state, county, and national levels. Still, there are unanswered questions about how advanced students fare in heterogeneous groupings. To help address these questions, teachers should be educated on methods that will appeal to all learners. Even subtle tweaking of a lesson to accommodate advanced students could create genuine engagement for those students. Teachers should also be taught how to use a variety of grouping schemes. Flexible grouping strategies will prevent students from being overly penalized if they don’t do well in one particular type of group.

My searches found no grant money geared specifically towards studying this issue. However, there are many educational foundations which seem to have open enough criteria that they might accept a proposal to study this issue.

Technology may have a role to play in resolving this issue. Complex measurement instruments may help to track students in a variety of groupings. Using detailed data analysis on specific students across a variety of grouping types might shed light on these issues. For example, advanced students might be tracked in several different types of homogeneous and heterogeneous groupings over the course of an entire school year.

Technology might also play a role in differentiating instruction for advanced students. A cooperative learning activity might include an individual component on the computer. This component could be specifically geared towards struggling, average, and advanced learners, respectively. The possibilities in this case are vast.

My study, like the other current research, leaves many unanswered questions. The future of the subject should include further studies. These studies should be detailed and longitudinal. Teachers should also be educated on how to incorporate technology into their grouping exercises and how to use technology to track student progress. Finally, teachers should experience professional development time that is geared toward helping them address the needs of all learners—including the advanced students who are so often neglected in the battle to improve education.

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Appendix A

Questionnaire

Please answer the questions by circling the answer that most closely describes how you feel about the question.

1) I enjoy working in groups.

Strongly Agree Agree Disagree Strongly Disagree Unsure

2) My contribution to the group is important.

Strongly Agree Agree Disagree Strongly Disagree Unsure

3) I like to help people in my group learn.

Strongly Agree Agree Disagree Strongly Disagree Unsure

4) Sometime my teammates take advantage of me because I know more about the subject.

Strongly Agree Agree Disagree Strongly Disagree Unsure

5) I like working in groups that have students that have different levels of understanding about the subject.

Strongly Agree Agree Disagree Strongly Disagree Unsure

6) I think that group work holds me back from my full potential

Strongly Agree Agree Disagree Strongly Disagree Unsure

7) I think that my part in group work helps other students a lot.

Strongly Agree Agree Disagree Strongly Disagree Unsure

8) I think that group work helps me learn more about the subject matter.

Strongly Agree Agree Disagree Strongly Disagree Unsure

Appendix B

Observed Behaviors Checklist

To be checked every five minutes

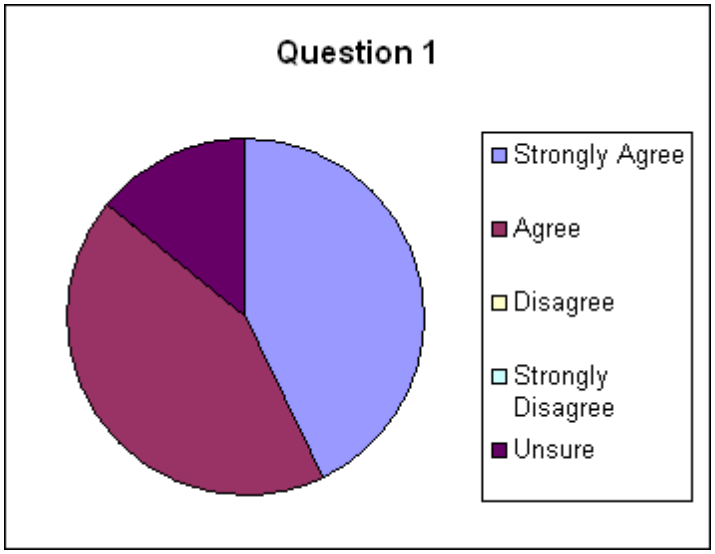
Student is not paying attention
Student is helping others
Student is the only student working
Student is complaining about work load
Student appears or complains about being bored
Student completes his/her portion before everyone else (check once)

Appendix C

Questionnaire Results

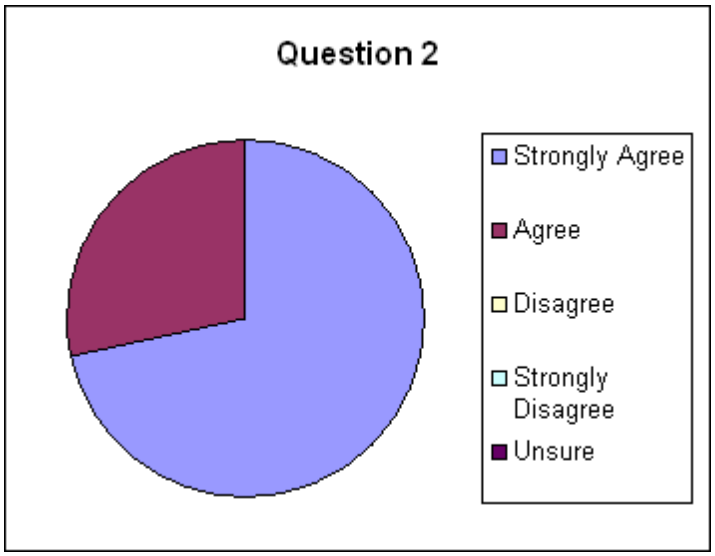
Question 1: I Enjoy Working in Groups.

Strongly Agree	Agree	Disagree	Strongly Disagree	Unsure
3	3	0	0	1



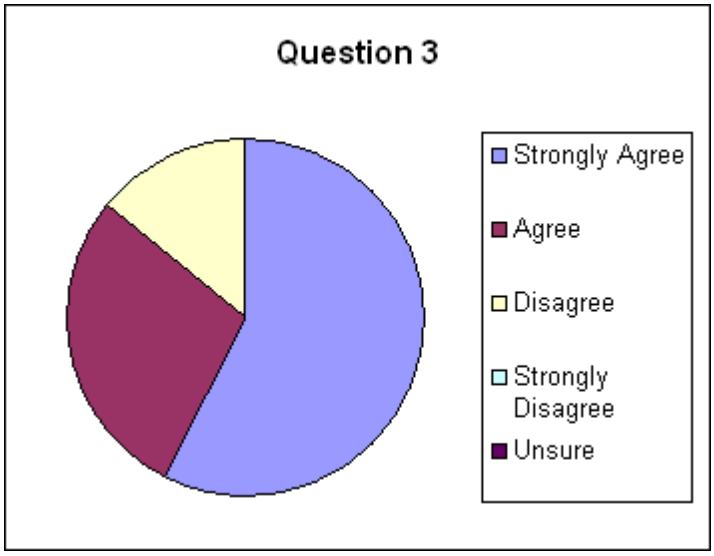
Question 2: My Contribution to the group is important.

Strongly Agree	Agree	Disagree	Strongly Disagree	Unsure
5	2	0	0	0



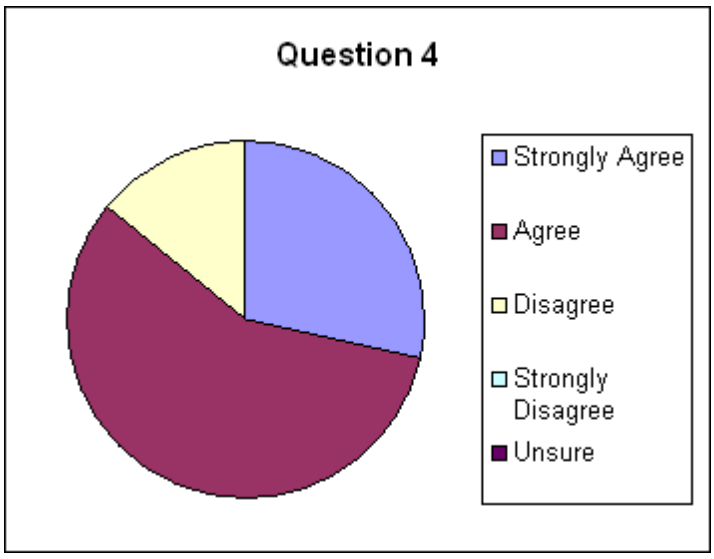
Question 3: I like to help people in my group learn.

Strongly Agree	Agree	Disagree	Strongly Disagree	Unsure
4	2	1	0	0



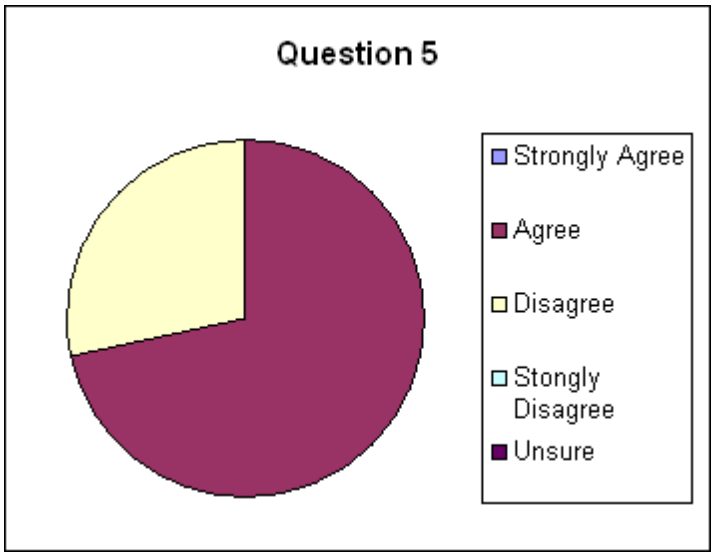
Question 4: Sometimes my teammates take advantage of me because I know more about the subject.

Strongly Agree	Agree	Disagree	Strongly Disagree	Unsure
2	4	1	0	0



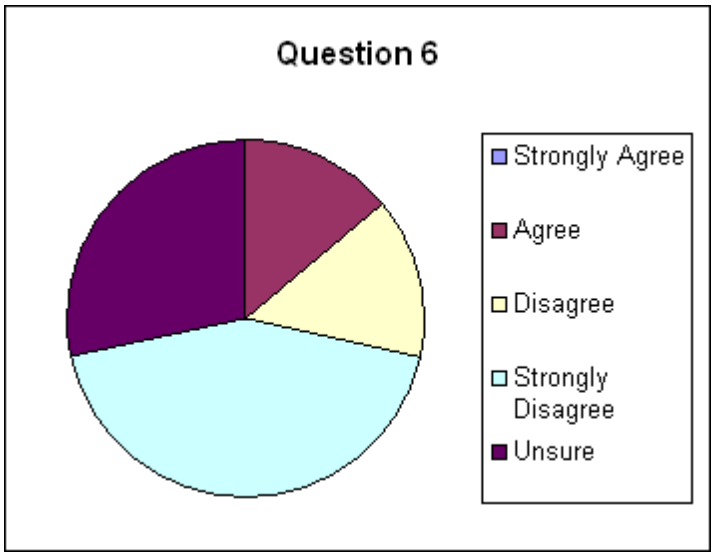
Question 5: I like working in groups that have different levels of understanding about the subject.

Strongly Agree	Agree	Disagree	Strongly Disagree	Unsure
0	5	2	0	0



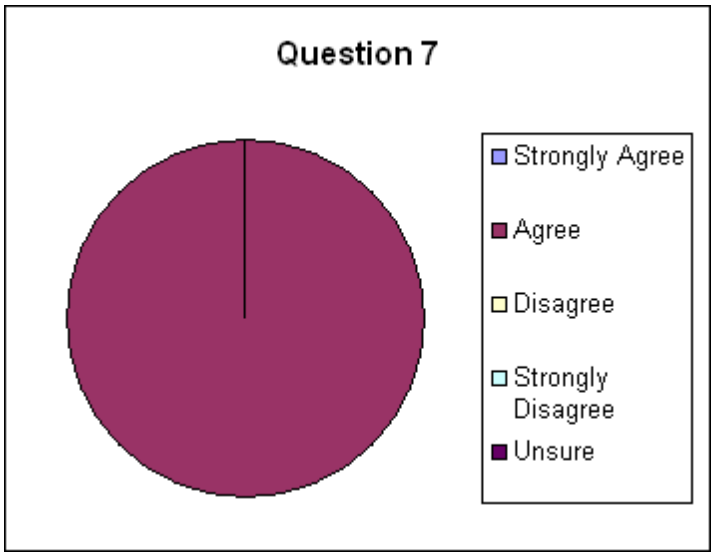
Question 6: I think that group work holds me back from my full potential.

Strongly Agree	Agree	Disagree	Strongly Disagree	Unsure
0	1	1	3	2



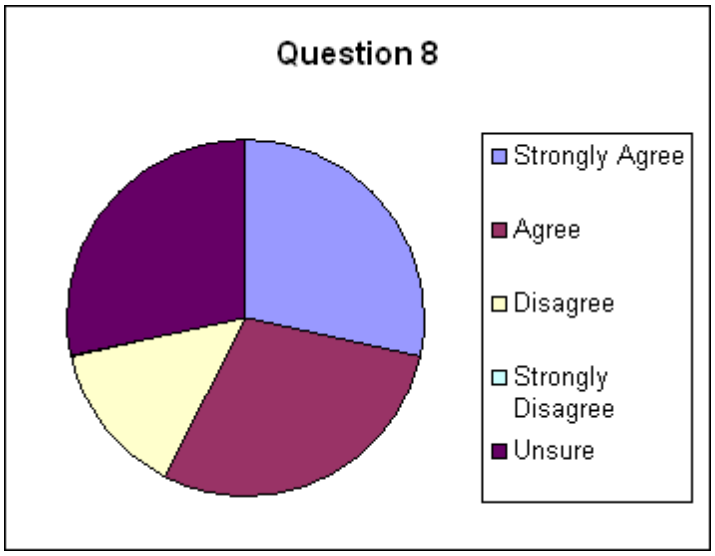
Question 7: I think that my part in group work helped other students a lot.

Strongly Agree	Agree	Disagree	Strongly Disagree	Unsure
0	7	0	0	0



Question 8: I think that group work helps me learn more about the subject matter.

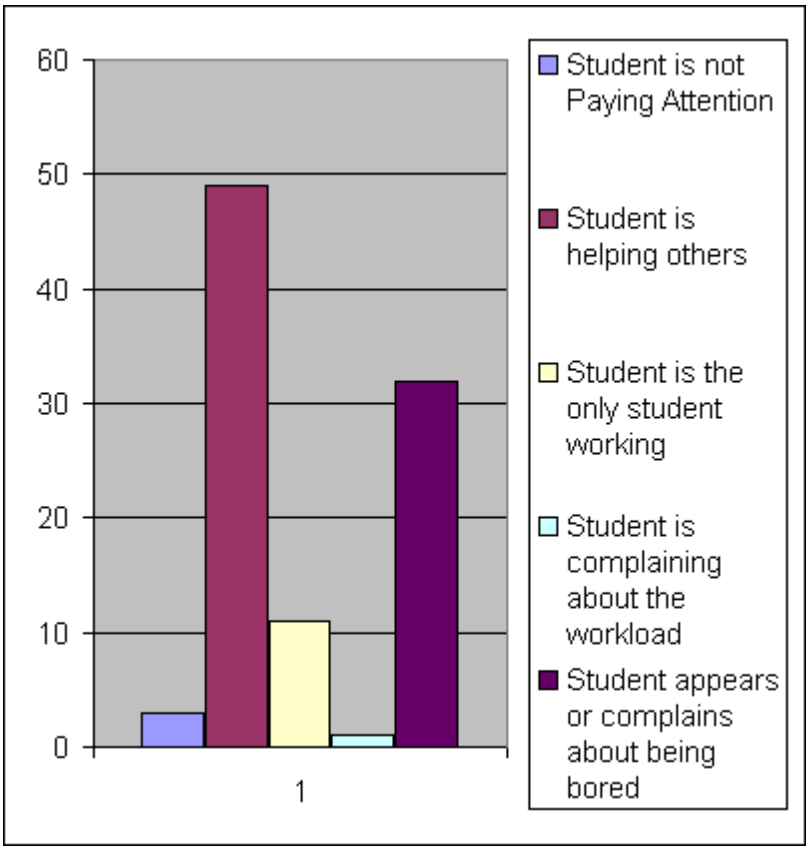
Strongly Agree	Agree	Disagree	Strongly Disagree	Unsure
2	2	1	0	2



Appendix D

Observed Behaviors

Student is not Paying Attention	3
Student is helping others	49
Student is the only student working	11
Student is complaining about the workload	1
Student appears or complains about being bored	32



Coloring a New Look on Education

Melissa Bayless

Educ 590, Fall 2007

The University of Tennessee at Chattanooga

The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149) has approved this research project 08-064

Introduction to the Problem

Accepted educational techniques, and human attitudes toward them, have changed through time. These changes in techniques depended on culture, station in life, and gender of students. Some cultures valued education more than other cultures did. For example, classical Greece culture was known for its philosophers and their advanced thoughts and discoveries. During the time of Sophocles and Aristotle, the aristocracy and the wealthy were generally the only ones to receive an education. The females of those stations obtained a limited degree of education that would provide them the most advantage in finding a husband and running a household. In the educational system of classic Greece, the technique used to transmit educational instruction was mainly lectures given by instructors to the male students. An exception was the instruction of military knowledge where demonstrations augmented lecture techniques to illustrate the exact methods needed in warfare.

Over the centuries, many cultures have risen to, and fallen from, places of educational superiority. We know about these cultures through their surviving history, art, and literature. Much of a culture's personality was expressed through its plays, art, and music. These arts can express much of the knowledge of a culture, many without the necessity of understanding the language of the culture.

Nonverbal artistic transfer of educational information has taken place since the time of the caveman. Prehistoric paintings inform the viewer of the animals that lived in the vicinity of the cavemen, and the cavemen's knowledge concerning those animals, such as which animals were for food and how they were hunted. If the present-day educational system used our predecessors as examples, the arts could possibly be used to help students better understand academic subject

matter, and, thereby, reduce the number of children being lost or unsure in their pursuit of an education.

Area of Focus Statement

The purpose of this study was to determine how well the arts enhanced traditional educational techniques.

Background

The issue of academic enhancement through the use of the arts has been discussed for many years. Many statistical studies support the use of the arts to aid in the retention and illustration of knowledge of academic subject matter. The arts have also been shown to help a child to develop self-worth, maturity, a routine, and determination. All these attitudes can support a child's improvement in his or her academic achievement; thus, the arts can be considered useful in the enhancement of education.

"The change in academic enhancement was most extensive and powerful when emotion was part of the learning. …The important idea, then, was that the arts trigger emotion" that enhances education (Zull, 2005, p. 2). "There have been many statistics to support the use of the arts to aid in the retention of knowledge of academic subject matters" (Pankratz & O'Donnell, 2001, p. 18).

As shown in the following exemplar set of statistical data, Zull (2005) correlated the enhancement of both verbal and mathematical test scores with the inclusion of various art coursework in an academic setting:

	Verbal Mean Scores	Math Mean Score
No Art Coursework	477	496
Acting/Play	542	532
Art History/Appreciation	517	518
Dance	514	510
Drama: Study or Appreciation	534	522

Music: Study or Appreciation	538	537
Music Performance	532	534
Photography/Film	526	526
Studio Art/Design	524	528

However, not all school systems yet support art enhancement of conventional educational techniques. In carrying out this present study, the research objective was to illustrate a better understanding of, and quantify the outcome of, the use of arts in educational enhancement in order to profit the child by increasing the student's capacity to understand academic subjects.

Limitations

The time limit for this research constrained the amount of time that could be spent on the use of the arts in the research classroom. Therefore, the full potential of the use of the arts in education may not be seen in the study results.

Possible Questions

1. How did the lack of the arts in education affect students?
2. Did the use of arts enhancement increase the students' gain of knowledge?
3. How did the use of the arts affect the students' attitude toward school?
4. Did the teacher believe that the use of the arts made a difference in the children's progress and self-esteem?

Review of Literature

For thousands of years, the arts, including music, dance, drawing, and theater, were used to teach new ideas and communicate knowledge. Exemplars of such historical use of the arts include (a) cave drawings in Europe and elsewhere, (b) the traditional music, (c) folkdance, and (d) ancient theater, such as Greek theater which conveyed belief in mythological gods. These are but a few examples of the historical use of the arts to communicate knowledge that existed throughout the world. These artistic techniques of communication were unique in that they did

not require the ability to read, or, in some instances, the ability to understand the spoken language.

In the past couple of centuries, the usefulness and importance of the arts in education have been forgotten or ignored. It has only been in the last 20 years that artistic augmentation of conventional educational techniques has been rediscovered. Art enhancement has yet to be accepted in mainstream instruction of educational techniques, possibly due to the fact that the educational instructors and administrations do not widely understand how or why the brain of a student responds to the arts so as to enable the student to better understand and remember newly gained knowledge.

Recent studies have shown that, during the process of education, the chemical make-up of the brain changes, especially if sentiments are involved:

> The chemical of emotion, such as adrenalin, serotonin, and dopamine acted by the modification of synapses; and the modification of synapses was the very root of learning. In some cases, such change did not occur at all unless the emotion chemicals and structures in the brain were engaged. (Zull, 2005, p. 2)

Seat of Learning through the Senses

The repetition of new experiences or new knowledge has also been shown to alter the chemical communications within the brain. Zull (2005) demonstrated that the emotions involved in such experiences encouraged the brain to release dopamine in the "brain's cortex used to create ideas, make decisions, and plan our actions," (p. 2) which gave a gratifying effect to the individual and encouraged the person to repeat the experience. Knowing this information, it is logical to include the arts in the conventional leaning process.

Thompson & Towles (2006) reported that the educational process needs to be initiated even before preschool. According to such studies, a child's interest was stimulated by exposing him or her to new ideas, and by enhancing the experience with the use of drawings, songs, and acting out things. This enrichment form was continued from preschool into higher levels of education. Drawings enabled the child to visualize what was explained such as connecting the name of an object with the drawing of the object (Chudler & Konrad, 2004; Wilcox & Sterling, 2006, p. 37). Songs helped children memorize newly-gained knowledge such as the ABC's, historical events, mathematical facts, and the science fun song of the bones (Gallegos & Chamberlain, 2006, p. 46). Theater has been used to help young children learn and remember things such as manners, and has been used to help young children model processes such as modeling the reading process through play-acting the sequence of events in plays like Little Red Riding Hood. The inclusion of the arts has frequently made the difference in a child being successful in his or her early education, and, by doing this, has laid the foundation for the house of knowledge (Subramaniam, 2006, p. 62). In school, it began with preschool (Quinn, 2006).

Until now, preschool has been concerned with getting the children ready for kindergarten emotionally, but not cognitively. This had led to many children starting school academically ill-prepared, especially those children from poverty or other disadvantaged conditions. Historically, students that started school with scholarly advantages stayed ahead, leaving the other children behind. However, once students started school academically behind, with each passing year, it became increasingly difficult to catch up to their peers. As time passed, these disadvantaged children fell farther and farther behind (Landry, Swank, Smith, Assel, & Gunnewig, 2006).

Disadvantaged children are not doomed to academic failure. At the end of one study about the importance of preschool instruction, the students' post-tests were compared to their base

tests. Results illustrated that the children of poverty who were exposed to preschool academic instruction started kindergarten at standard academic levels, rather than beginning academically behind other kindergarten students. Preschool established the disadvantaged children on a better footing for kindergarten, which, in turn, created a springboard for their academic career. “This is an important forged message created through the fires of trial and error” (Landry et al., 2006, p. 306).

Of interest to researchers Thompson & Towles (2006) was the Montessori School’s method of instruction, where all the arts were used with a hands-on approach. The philosophy of the Montessori School was based on its founder’s belief that learning was a natural process in which an educator provided the stimulus, materials, and activities for the children to use in order to explore new experiences. Testing of the Montessori School’s arts-enhanced method of instruction illustrated the extreme importance of preparing young children in a manner where they had a firm base of knowledge, which had been built and expounded on in order to broaden the foundation for accepting new material. Without this strong base of information, the foundation would have been faulty, the introduction of new material would have collapsed, and there would have been no foundation on which to build any other newly-introduced material (Thompson & Towles, 2006).

Many kindergarten children from advantaged families already had this foundation in place and grew faster academically than the disadvantaged kindergarten children. As preschoolers, the advantaged children had been exposed to cultural activities within the community, and had been provided with material at home to actively participate in the use and enjoyment of the art forms (Landry et al., 2006). Children of poverty can experience the same advantages if the flow of

action changed to give the deprived a bridge to cross the creek of missed opportunities to the land of found skills.

There have been workshops created to help teachers to learn art-enhanced ways to instruct students so as to make education a more rememberable and rewarding experience. Workshops to carry out this purpose were initiated by Kathryn Jones, the head of the "nonprofit organization Rainbow Fleet that provided affordable and quality childcare to the community of Oklahoma City" (Thompson & Towles, 2006). Jones' workshops were made possible through grants which paid for Montessori teachers to help educate preschool caregivers, and to enable the caregivers to earn credits toward becoming a "child development associate" (Thompson & Towles, 2006).

The workshops consisted of six, 2-hour sessions. The six workshop sessions were offered three times over a year and a half time span. Each session had typically 18 participants, with 40 percent of the total participants attending every meeting. The conferences were attended by more than half of the total participants for two-thirds of the sessions. These assemblies were conducted in a relaxed atmosphere in which new materials were introduced while food and drinks were being provided. The participants were also able to have informal conversations with their instructors, which provided them with opportunities to question the authorities on other methods of instruction and uses of the materials.

The first session pertained to strategies for providing children with the opportunity to practice everyday-life motor skills and the chance to self-correct their own mistakes. The second meeting gave caregivers experiences on how to provide students with motivation and exercises in "self-control, purposeful movement, and group cohesiveness" (Thompson & Towles, 2006, p. 22-24). The third and fourth assemblies provided facts on the stages of "language from birth to six years old using listening, oral, visual, and prewriting skills" (Thompson & Towles, 2006, p.

22-24). The fifth encounter supplied information on how to develop “knowledge about numbers” (Thompson & Towles, 2006, p. 22-24). The sixth get-together dealt with developing sensory skills. All six sessions used art-enhanced methods to help enrich the learning process through the use of songs, games, drama, and/or creative activities. These sessions were so successful and entertaining that the participants asked for more developmental conferences, as well as more in-depth programs concerning younger age groups.

The use of music on memory and the emotional wellbeing of the students have been explored by other studies. The utilization of music therapy with special needs children better enabled a student to remember information. Music was shown to be the key element used to hook memory and learning together such that the student more easily recalled information by humming the tune used during instruction to instill the information in the student’s mind. “The tune used to memorize the A, B, and C’s was an example of this technique” (Gallegos & Chamberlain, 2006, p. 49). This procedure has been widely used to teach a broad variety of factual information.

One study of the therapy aspect of music has shown that music enabled a great enhancement of a student’s “self-confidence and socialization skills” and was conducive to the “emotions and self-esteem of students” (Gallegos & Chamberlain, 2006, p. 48). It was especially important for those lacking educational talent or receiving low grade points. This method of learning has been a way for the mainstreamed special needs student to show the other students a new characteristic of their personalities and intellects, and to gain peer respect for what he or she has accomplished.

In our country, “there have been about seventy schools that prepared educators of music therapy which were approved by the American Association of Music Therapy. Each faculty was

composed of instructors that crossed many different areas of education and medicine" (Gallegos & Chamberlain, 2006, p. 49). This broadened the educational base from which therapeutic educators have drawn knowledge as to how to best help their special charges. These special educators helped create a network with other special educators to better reach special needs students and teachers who might not have any knowledge of how to help their special needs children.

Such special needs students should be treated as any other student in that their instructors should help them to reach their full potential using any available educational technique. Despite this instructional goal, few special needs students have been included in music classes because conventionally-trained instructors have been daunted by the thought of trying to convey musical knowledge to these students. The critical attribute of this musical wisdom is for the special needs child to learn how to enjoy this time, and to carry this knowledge learned through music therapy into his or her future. Many teachers have missed this meaning and have let their own fear hold them back from aiding these unique children in accessing a new avenue for enjoyment, learning, and social connection with normal children (Gallegos & Chamberlain, 2006). Many normal children were typically not around these special children, and, therefore, they did not understand them. This unfamiliarity has caused academically typical children to have trouble keeping their minds on their work when they are suddenly put in a class with the special children. Introducing the children through the common ground of music could eliminate this action because this art moves all that hear to special meaning and understanding.

Another emotion-provoking art is theater, which has been used to express clarification of recently acquired information. The effectiveness of the theatrical arts in enhancing conventional instruction was shown in a study wherein American folklore stories corresponding to nature,

such as “Pecos Bill and the taming of a tornado,” have been read before the introduction of the lesson (Wilcox & Sterling, 2006, p. 36-41). The story stimulated the student to search for more information on the topic. The students were then allowed to create their own plays about the folklore which would be read, and then presented to the class. After this, the children went to various learning centers to widen their knowledge base. They went on to create dioramas and writing journals about such things as how people in the 1800’s might have perceived different kinds of natural occurrences, which might have explained the creation of the American folklore. The children created scenes from natural events, as well. Also, the students explored how they might have sent out weather warnings, and analyzed how these events affected the lives of people in the 19th Century. These mental exercises manifested emotions that activated chemicals in the brain, and made this a very rewarding learning session (Wilcox & Sterling, 2006).

Current research indicates that educational enhancement through the utilization of art has only taken place when the students received pleasure by understanding new knowledge through the use of selected art forms. The students’ brains were stimulated, and made new connections in the learning process, thereby creating new neural pathways to store the newly-gained knowledge.

This information suggests that instructors should willingly increase their curriculum’s stimuli through the introduction of the arts. In the future, teachers who understand the importance of arts enhancement will endeavor to use this to give their students the best possible opportunity to learn.

Data Collection and Results

Data Collection

Methodology

In this section of the paper, an explanation of how the study was carried out will illuminate the plan of execution followed in conducting the research. When creating this plan, the purpose of the action research, and its possible outcomes, were kept in mind in order to help guide the planning process.

This paper's purpose was to research the degree of academic enhancement that incorporation of arts-enhanced strategies provided in comparison to traditional methods of instruction. Therefore, the plan of execution began with pre-testing students to get their base results before initiating the control period, which consisted of the use of traditional instruction without arts enhancement. At the end of this control period, another test was given. Comparing the pre-test and post-test gave the results of the traditional educational method. The results of the control period post-test were used as the pre-test for the research period. The research time used the different arts to help the students to absorb the new information being presented. At the end of this research period, a third test was given. The second set of tests was compared to the third set of tests. The comparison of these two sets of tests revealed the degree of enhancement that the arts provided over the traditional method, which was of the main objective of this research.

Membership and Negotiations

This research took place during the first student teaching placement in a second grade classroom at a suburban elementary school in Hamilton County. The researcher and the teacher involved negotiated the topics of classes used for classroom instruction during the execution of this research, and determined that a series of science unit lessons were to be taught. Of course, the standards used depended on what topic the science unit lessons encompassed. The total time of this study consisted of the 3rd and 4th project weeks of the first placement.

Description

This research investigated the use of the arts to instruct the class in the negotiated science lessons, which was pre-decided between the researcher and the classroom's teacher. The classroom teacher and student teacher assigned the classroom students specified codes that were only known to the two teachers. This allowed the students' anonymity to be kept during the research process.

The following plan was instated. At the beginning of the 3rd week of the first placement, a pre-test was given to the students to clarify what prior knowledge of the subject matter the students possessed. Also, the students were given a pre-attitude survey on the arts. Next, all second-grade teachers received a pre-attitude survey before the research period began. The 3rd week of school during the first placement was treated as the control period for the class, so the science lessons were taught without the use of arts enhancement. A control period post-test/research period pre-test was given prior to continuing the research period. The 4th week was then used to instruct the students, while incorporating the use of the arts. At the end of the 4th week, the students were retested and the research period's pre-test and post-tests were compared against each other for each student. A post-attitude student survey was given and compared with the pre-attitude student survey. All the second-grade instructors received a post-attitude survey to be compared to the teachers' pre-attitude surveys. The comparisons of the pre-test and post-test, as well as the pre-survey and post-survey of the students and the instructors revealed how successful the use of the arts enhancement method was.

Examples of the surveys are in Appendix A. The pre-test and post-test are contained in Appendix B.

Data Collection Methods

Rationale. There were four questions to which this research hoped to respond. How the students were tested depended on each question, and how it could be answered. The research methods gave either qualitative or quantitative answers. The techniques that gave the most valid and reliable responses were the ones that provided quantitative results. The questions that the research hoped to answer were the following.

1. How did the lack of arts education affect students?
2. Did the use of arts enhancement increase the students' gain of knowledge?
3. How did the use of the arts affect the students' attitude toward school?
4. Did the teacher believe that the use of the arts would make a difference in the children's progress in their academics and self-esteem?

Course of action

The initial tests were given at the beginning of the 3rd week of the first 8-week placement. The initial tests consisted of surveys for the teachers involved in the research process, as well as the pre-tests for the students and the pre-attitude student survey on the arts.

After the initial testing (test A), the class received their pre-arranged science lessons without the use of the arts. A week of basic instruction on the solar system was presented in the traditional manner by reading to the class from *Space Explorers* by The Magic School Bus (Moore, 2000). This established the control for the class that would last 1 week. During the week, observations of the students and their portfolios helped the researcher and the classroom teacher to determine if the students were making progress. At the end of the control period, a post-test (test B) was given. The two tests were compared to establish the knowledge conveyed by the traditional method. Note: Post-test B results were used as the research period pre-test which established the students' knowledge prior to the initiation of the arts-enhanced instruction.

Again, observations were made throughout the 4th week by the researcher and the instructor to verify progress made by the students. At the end of the 4th week, a post-test (test C) was administered to establish how much was learned during this time. All three tests were the identical test to prevent any misunderstandings or anomalies in the testing process. The results of the tests and their comparisons are located in tabular form in Appendix C. The test data are presented in Appendix D. The second-grade instructors were also given a post-survey to determine if their opinions about arts-enhancement had changed during this research time. A post-attitude student survey on the arts was also given to the students involved in this study. At the end of the research, the knowledge gained by the students during the control time was compared with the period that arts enhancement was used. The test results and comparisons are reported in Appendix A expedited evaluation of the students' the gain of knowledge for each period.

Resources Statement

The Tennessee Academic Standards and Hamilton County Department of Education Standards and Benchmarks were used. Frequent consultations with the classroom teacher helped to guarantee that the researcher stayed on track while proceeding with the project. Planning for the science lessons, and having the educational materials and art materials ready for the class prior to instruction, was essential.

List of Material Resources

Tennessee Academic Standards, Hamilton County Department of Education Standards and Benchmarks, unit and lesson plans, an overhead projector, projector film, a tape player, tapes, music tapes, a paper cutter, art supplies, a stapler, a copying machine, paper, a computer, etc. were utilized.

Results

As previously stated, the purpose of this research was to evaluate the usefulness of arts enhancement in education to aid in the understanding and retention of educational material, as compared to traditional instruction without enhancement. The results of the comparisons helped to answer the research questions, which informed the researcher, and the instructor involved in the research, if the use of the arts-enhanced instruction increased the gain of knowledge. Comparison of the pre-student attitude survey and the post-student attitude survey on the use of the arts helped to answer if the arts affected the students with a positive or negative attitude towards learning.

The following are the grade ranges used in scoring the tests:

90 to 100 is an “A.”

80 to 89 is a “B.”

70 to 79 is a “C.”

60 to 69 is a “D.”

59 and below is a “F.”

The control period pre-test presented the following results:

“A” _0_

“B” _3_

“C” _2_

“D” _1_

“F” _11

This test illuminated the fact none of the students knew everything that was on the test. Only three students had more than an average amount of knowledge. Two students knew an

average range of information about the solar system. One barely passed. Finally, almost two-thirds of the class failed the pre-test.

After reading the chosen book for the control period, the control period post-test was given. These results established the knowledge gained during the control period. The control period post-test presented the following results:

"A" 1

"B" 2

"C" 3

"D" 4

"F" 7

After this control period, there was a gain of one "A," a loss of one "B," a gain of one "C," a gain of three "D's," and a loss of four "F's." This test established that there was some knowledge gained during the control period's traditional process.

This control period post-test was also used as the pre-test for the research period. The arts-enhanced process, during this investigation phase, utilized music, art, and body movement, as well as colorful transparencies on the overhead projector to convey knowledge to the students. The research period post-test was given after this time and compared to the control period post-test. The research period post-test presented the following results:

"A" 4

"B" 6

"C" 4

"D" 1

"F" 2

There was a gain of three “A’s,” a gain of four “B’s,” a gain of one “C,” a loss of three “D’s,” and finally a loss of five “F’s” when compared to the control period post-test.

In comparing the tests results of each student, one can understand the gain or loss for each test, and which educational presentation method was best responded to by the student.

These test results showed that five students seemed to like the traditional process best. Eleven showed an improvement using the enrichment process, and one showed neither an improvement nor a loss using the enrichment method or the traditional.

This research illustrated the answer to the proposed purpose of this study to determine how well the arts enhanced education by the retention of gained knowledge.

The research showed:

1. The percentage of students that learned and retained knowledge best by the arts enhanced method was 65%.
2. The percentage of students that learned and retained knowledge best by the traditional method was 29%.
3. The percentage of students that learned and retained knowledge equally well with either method was 6%.

Responses to the possible questions proposed at the beginning of the research are as follows:

1. How did the lack of arts in education affect students? Answer: Without the employment of the arts-enriched strategies, 65% of the students would have achieved at a lower level of performance.
2. Did the use of the arts enhancement increase the gain of knowledge? Answer: Yes. It enabled 65% of the students to achieve at a higher level, while 6% of the students

learned equally well with either method, and 29% of the students were inclined to learn best with the rote, traditional method.

3. How did the use of the arts affect the students' attitudes towards school? Answer: One hundred percent of the students anticipated with happiness the strategies used with the arts enhancement approach to teaching. It seemed to help them look forward to the next day of school.
4. Did the teacher believe that the use of the arts made a difference in the children's progress and self-esteem? Answer: Yes. The cooperative teacher, as well as the other second-grade teachers surveyed observed the excitement and happiness demonstrated by the students using this method of learning.

The findings of this research are valuable in that they illustrated which method could possibly best convey the information to the student. This would be needed information for the teacher to proceed in the educational process for the students. The students could also find the information valuable by understanding which educational process that each learns with best, and utilize it while studying.

While evaluating the test results of these students, it was necessary to understand certain information about the students that may have or did affect their test taking. Two students were inclusion students. One student was hard of hearing. Five students were below average, and, as a consequence, the tests were read to these students on the first two administrations. The third test was not read to them, so this could have possibly affected the outcome by reducing the students' test scores. However, the overall outcome would still be the same. The majority of the class preferred, and profited from, the arts-enrichment method. There was a gain by the class of 350 points using the arts-enhanced method, while there was only a 110-point gain using the

traditional method. Therefore, the purpose of the research was clarified. The arts-enhancement method indicated it was the best method for information transfer for the majority of students.

The analysis of the teachers' responses revealed the overall instructor view on the use of art in the educational process as containing very useful strategies.

The pre-survey, which was given prior to the art-enhanced science unit, revealed that 40% of the students had prior experience with art enhancement with use of songs, dance, and painting. These children felt it aided them in better understanding the subject matter being studied. One hundred percent of the second-grade teachers had actively used this educational process through songs, dance, and theater. They had a similar viewpoint as the students who had experienced this learning procedure. At the end of the research, a post-survey was given to the students and instructors to see if their views had changed since the beginning of the research period. These results revealed that 100% of the students experienced a positive attitude towards the arts-enhanced instructive strategy. The instructors concurred, after they witnessed that the students were kept positively engaged, and seemed to understand the subject matter better during this research period, by use of various forms of arts enhancement.

Conclusions and Recommendations

The arts have been used for thousands of years to communicate with others. It has been also documented that the use of the arts stimulates the brain to release certain chemicals to communicate from one synapse to another. This induces a sense of pleasure, which will encourage a repetition of the event that caused the sensation. In conjunction with traditional academic instruction, the arts enhance the experience of learning and make it more memorable for the students. Therefore, the pupils will be able to draw more easily on the learned information, as needed for future learning experiences.

Conclusions

This research illustrated the importance of the use of the arts in education which was revealed by the fact 65% of the students learned, and retained knowledge best, by the arts-enhanced method.

There is a lesson to be learned about the ways in which we design curricula and the components of the materials we provide for students to utilize in their work. In order to carry this out, there are many grants to help support this endeavor. Grants are offered through Tennessee Arts Commission Community Enhancement Grants, M.T.S.U. Faculty Creative Activity Grant, and the National PTA Mary Lou Anderson Reflections Art Enhancement Grant Program. The NEA organization reports on the importance of the inclusion of the arts in education, and the results of its use. Also, it lists the different grants that are available for use (Ball, 2002, p. 1-44). There are various professional educational development programs available to help instructors to learn new ways to enhance their instructional strategies such as Braindance and the workshops offered by the Rainbow Fleet (Thompson & Towles, 2006). The use of technology can aid the educator in finding new ideas in the field of arts enhancement. Also, the teacher could access the interactive programs dealing with the topic being taught, for example, http://www.funbrain.com.

Decisions we make about such matters have a great deal to do with the kinds of minds we develop in school. Minds, unlike brains, are not entirely given at birth; minds are also forms of cultural achievement. The kinds of minds we develop are profoundly influenced by the opportunities to learn that the school provides. This is the point of my remarks about what education might learn from the arts. Education is a process of learning how to become the architect of our own education. It is a process that does not terminate until we do (Eisner, 2002, p. 11-12).

Because not all children learn in the same manner, many different forms of instruction should be used to reach the maximum number of students. Both traditional and arts-enhanced instructional strategies work hand-in-hand to help students in the learning process. As a novice researcher, I would like to propose that an interested teacher write a grant to obtain funding for arts-enhancement materials, so an arts-enhanced unit could be created, taught, and shared with the faculty and student body to motivate instructors to incorporate the use of the arts-enhanced teaching strategies. The flexibility of the instructor to be able to blend the traditional and arts-enhanced instruction is what makes an effective teacher.

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Appendix A

Student Survey
Pre-research Analysis

During my Student Teaching, I am required to carry out research and write a paper about the results of the research. My investigation will test the quality of enhancement the arts will play in the academic process. Please answer these questions as truthfully as possible. It would greatly augment the results of my research. Thank you for helping me with my research endeavor.

1) Have you ever used an art (art, music, theater, or dance) to better understand a subject?

2) If you have, when did you do it? What was the art? What was the subject?

3) How did the art seem to help you?

Student Survey
Post-research Analysis

During my Student Teaching, I am required to carry out research and write a paper about the results of the research. My investigation will test the quality of enhancement the arts will play in the academic process. Please answer these questions as truthfully as possible. It would greatly augment the results of my research. Thank you for helping me with my research endeavor.

1) Did you have fun during this research? If so, how did you have fun?

2) What did you learn? Did you use an art to help you understand the subject?

3) How did the art seem to help you?

Instructor Survey
Pre-research Analysis

During my Student Teaching, I am required to carry out research and write a paper about the results of the research. My investigation will test the quality of enhancement the arts will play in the academic process. Please answer these questions as truthfully as possible. It would greatly augment the results of my research. Thank you for helping me with my research endeavor.

1) Have you ever used an art (art, music, theater, or dance) to teach a subject?

2) If you have, when did you do it? What was the art? What was the subject?

3) How did the art seem to help you?

Instructor Survey
Post-research Analysis

During my Student Teaching, I am required to carry out research and write a paper about the results of the research. My investigation will test the quality of enhancement the arts will play in the academic process. Please answer these questions as truthfully as possible. It would greatly augment the results of my research. Thank you for helping me with my research endeavor.

1) Did you enjoy observing this research? Did the students seem to learn?

2) How did or would this help your students?

3) How would this art help you to teach?

Appendix B
2nd Grade Science

First/Second/Third Space Trip

Directions: Circle the letter of the correct answer for each multiple choice question.

1) The sun is a _____.

   a) star
   b) planet
   c) comet
   d) satellite

2) The earth is the _____ planet from the sun.

   a) first
   b) second
   c) third
   d) fourth

3) The moon is a _____.

   a) planet
   b) star
   c) natural satellite
   d) comet

4) A star is a _____.

   a) a frozen planet
   b) a ball of gas that burns at extremely high temperatures
   c) the last planet
   d) moon

5) A comet is a _____.

   a) chunks of ice and rock
   b) burning ball of gas
   c) a planet
   d) a moon

6) Earth is where we live.

   a) True
   b) False

7) A meteor is a _____.

   a) cloud of dust
   b) chunks of rock that hit the earth as meteorites
   c) a shoe thrown in space
   d) planet

8) An asteroid is a _____.

   a) floating boulders located in the asteroid belt
   b) flaming ball of fire
   c) frozen planet
   d) moon

9) The moon has _____ .

   a) volcanoes
   b) lakes
   c) phases
   d) a man

10) The sun gives _____.

   a) shade
   b) light and heat
   c) rain
   d) sea sickness

11) Which planet is the largest?

   a) Pluto
   b) Venus
   c) Jupiter
   d) Mars

12) Which planet is the smallest?

a) Mercury
b) Saturn
c) Earth
d) Pluto

13) Which planet is the furthest from the sun?

a) Neptune
b) Earth
c) Moon
d) Pluto

14) Which planet is the closest to the sun?

a) Earth
b) Pluto
c) Jupiter
d) Mercury

15) How many moons does Earth have/

a) one
b) two
c) three
d) four

16) What planet has the most moons?

a) Earth
b) Saturn
c) Pluto
d) Venus

17) Which planet has plants and animals?

a) Earth
b) Mercury
c) Mars
d) Venus

18) Which planet has an atmosphere where humans can live?

a) Jupiter
b) Moon
c) Mars
d) Earth

19) The planets with rings are _____.

a) Earth and Sun
b) Mars and Venus
c) Pluto and Mercury
d) Saturn and Uranus

20) The atmosphere is _____.

a) the space around the sun
b) the space between Jupiter and Neptune
c) the blanket of air around the Earth
d) the last planet

2nd Grade Science Space Trip Answer Sheet

1) a - star

2) c - third

3) c - natural satellite

4) b - a ball of gas that burns at extremely high temperatures

5) a - chunks of ice and rock

6) a - True

7) b - chunks of rock that hit the earth as meteorites

8) a - floating boulders located in the asteroid belt

9) c - phases

10) b - light and heat

11) c - Jupiter

12) d - Pluto

13) d - Pluto

14) d - Mercury

15) a - one

16) b - Saturn

17) a - Earth

18) d - Earth

19) d - Saturn and Uranus

20) c - the blanket of air around the Earth

Appendix C

Class #1 comparative grading of tests for evaluation

----------Unit #1----------/----------Unit #2----------

	Pretest	Posttest		Pretest	Posttest	
Student	test A	test B	test B- test A	test B	test C	test C- test B
C1-S1	70	65	-5	65	95	30
C1-S2	45	80	35	80	75	-5
C1-S3	80	70	-10	70	80	10
C1-S4	30	40	10	40	25	-15
C1-S5	45	45	0	45	95	50
C1-S6	60	75	15	75	85	10
C1-S7	85	90	5	90	100	10
C1-S8	30	30	0	30	85	55
C1-S9	50	65	15	65	75	10
C1-S10	45	60	15	60	85	15
C1-S11	70	70	0	70	85	15
C1-S12	55	55	0	55	80	25
C1-S13	45	15	-30	15	75	60
C1-S14	85	85	0	85	100	15
C1-S15	50	65	15	65	65	0
C1-S16	50	45	-5	45	70	25
C1-S17	25	15	-10	15	30	15

Number of times test # B had best scores__2_____

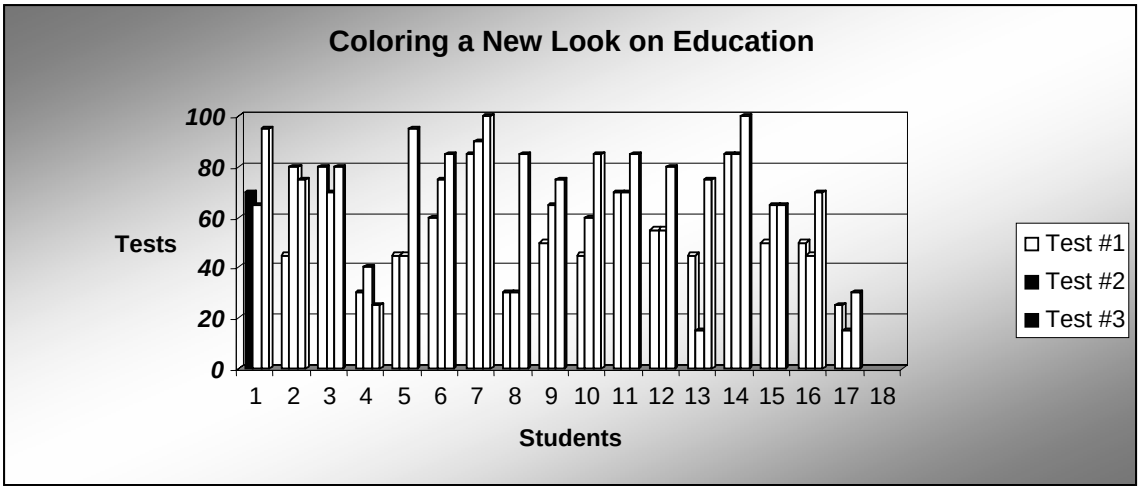
Number of times test # C had best scores__14_____

Overall best method used (Traditional or Enhanced)___Enhanced_____

Appendix D
Test Data

Student	Test A /Flight One	Test B /Flight Two	Test C /Flight Three	TestB-TestA	Test C-TestB	Best Method Used
Student #1	70	65	95	65-70= -5	95-65=+30	Enriched
Student #2	45	80	75	80-45=+35	75-80=-5	Traditional
Student #3	80	70	80	70-80=-10	80-70=+10	Enriched
Student #4	30	40	25	40-30=+10	25-40=-15	Traditional
Student #5	45	45	95	45-45=0	95-45=+50	Enriched
Student #6	60	75	85	75-60=+15	85-75=+10	Traditional
Student #7	85	90	100	90-85=+5	100-90=+10	Enriched
Student #8	30	30	85	30-30=0	85-30=+55	Enriched
Student #9	50	65	75	65-50=+15	75-65=+10	Traditional
Student#10	45	60	85	60-45=+15	85-60=+15	Equal
Student#11	70	70	85	70-70=0	85-70=+15	Enriched
Student#12	55	55	80	55-55=0	80-50=+30	Enriched
Student#13	45	15	75	15-45+-30	75-15=+60	Enriched
Student#14	85	85	100	85-85=0	100-85=+15	Enriched
Student#15	50	65	65	65-50=+15	65-65=0	Traditional
Student#16	50	45	70	45-50=-5	70-45=+25	Enriched
Student#17	25	15	30	15-25=-10	30-15=+15	Enriched

Numerical comparison of pre-test and post-test.



Bar graph for the students' three tests.

	Control (Traditional)	Research (Arts Enhanced)
Total Points Lost	-60	-20
Total Points Gained	+ 110	+350
Number of Times Greatest Gain	5	11
Overall Best Method Used	No	Yes

Comparison of points gained or lost on the pre-test and post-test.

	Test #1	Test #2	Test #3
Mean	54.1	57.1	76.8
Mode	45	65	85
Median	50	65	80

Statistics for the pre-test and post-test.

Effectiveness of Introducing Learning Strategy and Meta Cognitive Information on Study Habits of Adult ESL Students

Brenda Edge Binkley

Education 590, Spring 2007

The University of Tennessee at Chattanooga

The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149) has approved this research project 07-032.

Introduction to the Problem

This project design is based on the specific needs and resources available to working adult students enrolled at a school in Chamblee, Georgia. The school has a diverse adult student population enrolled in their English Speakers of Other Languages program. There are approximately 726 students enrolled, representing 56 different nationalities and 45different languages. Students are 18 years or older; most are employed and attend school after work. Classes are based on three, 5-week sessions of 100 hours, or 4-hour-long class sessions, Monday through Friday, for 5 weeks. The current evening schedule is from 6:00 p.m.-10:00 p.m. This schedule is important to note as part of the rationale of this project is to underscore the obvious limitations on time that each student faces. Currently, there are free help sessions available for struggling students, but few are able to take advantage of the service because they work or attend classes for 12 hours each day, assuming an 8-hour work-day combined with 4 hours of class time. Study time is squeezed into small blocks of time, in a variety of places, during the day for students, so many students are not able to attend help sessions due to their already grueling schedules.

Many of the school's students are struggling to learn. They attend class regularly. They are highly motivated. Most of the students make sacrifices to attend. Those sacrifices include time, money, and effort. But many do not have the study skills, the learning schema, or the metacognitive knowledge to make effective use of the limited time that they have. Some drop out because their grades fall as the coursework becomes more content-centered and more difficult grammatically.

It is an almost painful process to watch as a student fails because he or she is too tired to study or does not study effectively enough to succeed. This project is an effort to introduce

students to learning strategies, raise their metacognitive awareness, and expand their learning schema—one student at a time.

Review of Literature

Research on teaching learning strategies indicates that, perhaps, the best way to teach learning strategies is by incorporating them into regular classroom instruction. “Effective strategy instruction is an integral part of classroom instruction, regardless of the content being taught: it is not an additional subject” (Beckman, 2002). Making strategy instruction an integral part of the educator’s pedagogy is referred to as the Direct Instruction model by Kinoshita (2003), the Transactional Strategies Instruction (TSI) model by Beckman (2002), and Strategies-Based Instruction (SBI), by Cohen (2003), in their reviews of literature.

Although direct instruction is generally considered the most effective method of introducing learning strategies and increasing metacognitive self-awareness, I did not choose to explore that option, for a variety of reasons. I wanted to reach students that I knew were having difficulties in subsequent classes because conversations with former students revealed their need for better learning strategies. I also considered direct instruction a possible conflict of interest as my students may have felt pressured to participate in spite of any disclaimers to the contrary. I also did not want to alter my teaching style because the courses are heavily content-based.

Students can attend day or evening classes, as their schedules demand. For example, one student attended my class for 3 nights per week and another teacher’s class for 2 days per week because of her work schedules. She had two jobs and maintained this combined schedule until she graduated. Others are less predictable, but do use the day or evening option frequently.

Andrew Cohen, of the Center for Advanced Research on Language Acquisition at the University of Minnesota, describes three frameworks for strategy instruction in the ERIC Digest, *Strategy Training for Second Language Learners* (2003), that are direct instruction models. The models were proposed by Pearson and Dole (1987), Oxford et al. (1990), and Chamot and

O'Malley (1994) (cited in Cohen, 2003). Cohen continues his commentary by describing options other than direct instruction:

- General study skills courses, separate courses.
- Awareness training, lecture/discussion formats, not usually part of regular classes.
- Workshops, variable time and goal expectations.
- Textbooks, embedded strategy instruction.
- Video instruction.

He notes that there are a variety of institutional situations combined with a diversity of students' needs and resources.

General study courses, lectures, and workshops are methods that would take time away from the class sessions, or be inaccessible for the majority of the students. There is not enough extra time, money, or energy for extracurricular studies for most students at the school. Predictably, the ones who would need the consciousness raising the least would be the most likely to participate. These options were considered, but my idea of using study packets and independent learning was based on the existing "help session" model that is underutilized, presumably due to time limitations. Students who need tutoring are accustomed to the idea of individual help with specific lessons. Giving individuals extra information, as they request it, is similar to giving them additional individualized instruction, as they request it.

Textbooks were the best alternative option that Cohen cited because the school's texts reflect a response strategy instruction's primary concept of self-awareness. Cambridge University Press language textbooks were published in 2005 and have been revised to include more self-assessment. The influence of the idea of the autonomous learner is apparent. Richards' *Interchange: Intro Student's Book* (2004) and *Student's Book 2* (Richards, Hull, & Proctor,

2005) have two full pages devoted to self-assessment and review after every two chapters. The lessons and the instructor's text are embedded with learning strategies that include graphic organizers, interpersonal interactions, and audio and visual components.

But these components need to be identified and modeled to maximize the student's awareness of the metacognitive aspects involved, according to Kinoshita. She states, "the cues for learners to use specific strategies such as self-monitoring, memorizing and co-operation" (2003) may not be apparent to the second language learner because the learners may not understand the instructions in the target language so they may not use the specific strategy being cued. Therefore, without the necessary metacognitive awareness of "purpose[,] will lose opportunities to increase their strategy repertoire, to successfully transfer strategies to new tasks." Students will not be as likely to transfer these skills or use them as part of their lifelong system of learning strategies (Kinoshita, 2003). Cohen concurs that, "unless the strategies are explained, modeled, or reinforced by the classroom teacher, students may not be aware that they are using strategies at all" (Cohen, 2003). Establishing personal learning repertoires is an integral part of strategy instruction.

Beckman doubts that many teachers teach strategic learning skills, and "in general, teachers are not aware of the importance of these skills. The fact that there is such little data leads to the assumption that strategy instruction is not a general classroom practice" (Beckman, 2002). She continues to discuss the problems of teacher awareness due to accountability issues. Practically speaking, if a student is not going to be tested on it, it is not going to be taught. The *how* and *why* of learning are not nearly as important as the *what* of the lesson. This is true for the majority of teachers in the majority of institutions, which is one reason strategy instruction is not a common practice, except in special education classes.

Research for specific learning strategies, which incidentally are the *what* component of my research, include many special education sources. *Cognitive Strategy Instruction,* a University of Nebraska, Lincoln website, (Reid, 2006) asserts "(s)trategy instruction is one of the most effective ways of improving academic performance for children with learning difficulties." Beckman, Cohen, and Koneshita would delete the qualifier "for children with learning difficulties." They offer convincing arguments for incorporating strategy cues and the modeling of strategic learning, allowing for guided practice and positive reinforcent of the autonomous learners as part of mainstream classrooms.

If teaching learning strategies is not a commonly accepted pedegogy in the United States, then it may be assumed that those strategies are not commonly taught elsewhere. Students devise their own strategies based on their personal learning shemata. Beckman predicts that, "(a) strategic learner knows the value of using particular strategies through experience, and is eager to learn others that might prove beneficial." She also notes, "(i)t can take years to develop a personal learning schema" (Beckman, 2002). This second observation is one that may offer another explaination of why teachers may be reluctant to attempt the process of autonomous learning strategy instruction. Results are incremental and difficult to measure.

Data Collection and Results

Data Collection

Information relating to pre-existing learning strategies and metacognitive awareness is based on a questionnaire given before receiving the learning packet information. This questionnaire information has been superseded by direct conversations with students, because a majority of the students did not give information that accurately reflected their personal knowledge of their learning style. They asked teachers and other students for help and did not

utilize the “don’t know” option available. Many left blank spaces for questions that they did not understand. One considered the questions a test on material he had not covered, so returned a blank questionnaire with his consent letter. The sample was small enough to accommodate and adjust for this by interviewing the students.

Discussions with the students revealed that one had highly developed learning schemata while others had only rudimentary skills and limited self-awareness. Students in this sample were skewed at either extreme in their preexisting repertoire of learning strategies. Only one qualified as a “strategic learner,” as described by Beckman. This student is a professional with an advanced degree in her own country. She is studying at the school prior to entering a certification program in the medical field. She had a highly-developed learning schema, requested specific information, and responded beautifully to referrals of available computer software and Web site addresses. She started using the *Rossetta Stone* immediately. She rated the websites as “wonderful” and the graphic organizers as “helpful.” Her response fit Beekman’s profile of an eager learner adding to her repertoire of strategies (2002). She benefited most with the least amount of supervision or instruction.

The student who benefited least was a student who never really understood the purpose of the study. He wanted content information, without any extra material, like learning styles. He was under pressure to do well on his tests and did not have time to study. This project sounded like a wonderful idea to him. “Learning better and easier” was how I explained it to students. But there is no magic involved; students must think and they must encode information. Grammar rules, particularly irregular verbs, take a lot of effort to learn, so the student was disappointed with the experience.

Three other students from my class participated in the study. One student had been out of school for over 10 years, another student had just moved to the United States and wanted the information packets he saw me give to two other students, and the third had a limited educational background, but studies hard and does well. Their learning packets consisted of graphic organizers, Web sites, and content notes from previous levels. They have said that the information is "helpful," but prefer more content information than learning strategy information. Each will be passing to the next level and they have heard from fellow students that the next level is much more difficult. I think that they may return frequently to pick up additional information and Web site addresses.

Three other students have taken the packets but have not followed up by giving me the consent letter or the questionnaire, for a variety of reasons. Other students have expressed interest, but "manana**,"** or "tomorrow" in Spanish, is an expression that I heard many times; this is a cultural attitude, rather than a specific day or time. Manana, next week, or whenever attitudes do not work well with specific deadlines.

Subjects

The subjects of the study are adult English as a Second Language students enrolled at an adult school in Chamblee Campus. Their native languages are Bosnian, Portuguese, Korean, and Spanish. The age range is from mid-20s to mid-30s. Educational backgrounds range from a doctorate in dentistry to a high school degree. Most work full time. All attend evening classes at the school. Many of the students have been out of academic settings for years, and are beginning again in a foreign language. These are motivated students, but many are pushed to their physical and mental limits. Many average 4 or 5 hours of sleep per night, on a regular basis. Time and fatigue are factors that I weighted heavily in designing this project.

Institutional Setting

The school, accredited by Council on Occupational Education, has a diverse adult student population enrolled in their English Speakers of Other Languages program. Located in Chamblee, Georgia just north of Atlanta, the school was established in 1986. Currently, there are 726 students, representing 56 different nationalities and 45 different languages. Students are 18 years old, or older. Most are immigrants, although some are refugees.

The ranges of educational backgrounds are as diverse as the nationalities and cultures. I have taught a lawyer from Columbia and a second-generation migrant worker from Mexico, in the same class. Well-educated Ethiopians from urban areas and under-educated Ethiopians from rural areas attend, as well, so, even within nationalities and ethnic groups, there is diversity. The educational goals are just as complex and diverse.

Methodology

Originally designed as a pre-test and post-test study, this project is more of a case study. The students did not respond well to the preliminary sign-up process. They said they wanted to participate, but only four students signed the consent letter. I am convinced that learning strategy instruction would benefit almost every student, from the novice to the strategic learner.

Problems with the design of the study reflect the time problems of the students. Unique communication barriers are based on different cultural and educational expectations, in addition to the obvious language problems.

Recruitment of subjects

Students were recruited on three levels, through posters, teacher recommendations, and personal contact by the investigator. I began by talking to students that I knew were having problems in the advanced levels. I teach at the intermediate and beginner levels, so have many

former students in the advanced levels. One of the most prevalent problems concerned gerund and infinitive usage in level seven, so I focused on contacting level seven students initially. Then, I wrote a letter to my colleagues to explain the project and ask for student referrals. I met with a group of seven students to discuss their participation in the project, but everyone involved—the instructor, the students, and myself─became very ill for 36 to 48 hours with some sort of flu. Two of those students did participate, but the momentum was lost. I then placed posters in the hallways, which actually netted the most participants. Three of my students asked if they could become part of the project because of the posters.

Description of the learning packet

The learning packet was a plastic, three-prong folder containing the consent letter and the survey (see Appendix A). When the students returned the folder, I asked them about the survey of their study needs and assessed their general comprehension of the questionnaire's content. Then, I gave them a summary of the project goals and information on metacognition, memory strategies, and test strategies, along with several graphic organizers and Web site addresses. (See Appendix B for a list of resources used for the packet.) The content of the packets varied with the academic level of the student and the student's stated needs and metaconitive preferences. They also got a highlighter, and instructions to take notes in their books with it. The folder pockets were filled by the time the student left.

Instructional Plan and Time Commitments

The goal was to be able to give the students the individualized packets and let them use them as supplements to their classes. The time commitments of the student and the teacher were to consist primarily of brief conversations, e-mail exchanges, and assembling or reading the materials. Limited involvement was designed into the study because of perceived time

limitations with the students' work and study schedules. Limited time is part of my work environment, also. The time and fatigue factors are real. Beckman (2002) discussed "teacher overload" as a reason more teachers did not incorporate strategy instruction in the classroom. The school's system is a "teacher and student overload" model.

Results

Results were insignificant, as measured by a change in survey responses. There was just not enough time to have changes in attitudes, except for in the most rudimentary of students, and those are the students that I will see next week or next month. Those that have well-developed learning schema did well by incorporating the new strategies with the old strategies they have used for years. Official results were not tabulated because only one or two students answered the survey accurately. The strategic learner benefited most, but there was very little change in her learning schemata. She discovered a new language program, *Rossetta Stone*, available at the school, and obtained new Web sites, graphic organizers, and a highlighter. But she has used these methods before; my information was additional information to a well-developed learning schema. I had anticipated helping the weaker students, but this method is best for the strongest. But, there are some who will benefit directly by the study as I will continue giving out packets for a while, and there are some who will benefit indirectly because I will begin incorporating strategy instruction in my pedagogy.

Conclusions and Recommendations

Conclusions

Although the short-term results of this project have been disappointing, there is potential improvement in the participating students' metacognitive self-awareness. There has also been an improvement in my teaching pedagogy because I have incorporated Kinoshita's and Beckman's philosophy into my own teaching style. It is difficult to introduce novel methods to classes which are accustomed to set procedures. Most teachers do not incorporate direct instruction methods of strategy training in their pedagogy (Beckman, 2002; Cohen, 2003; & Kinoshita, 2003), so most students are unfamiliar with the style and type of instructions that they hear from me. They don't know how to respond to the question: How do you learn? But, exposure, or raising self-awareness, is the first step. This project has raised my self-awareness and increased my awareness of my students' metacognitive diversity. This project was designed to introduce students to learning strategies, raise their metacognitive awareness, and expand their learning schema—one student at a time, but the most successful student may have been me. I have learned some of the benefits, and downfalls, of teaching students how they learn and I am sure the students and I will continue to learn more in the future. Students need more time to assimilate this type of information.

Recommendations

The individual learning packets is not a bad idea, especially at this school, but there needs to be a centralized system of delivery to facilitate students getting the package. The questionnaire should be shortened to one page. One possibility is to divide it into two questionnaires because self-assessment is an integral concept in developing a repertoire of learning strategies. One page of questions is enough information to help the students assess their learning styles. The Internet

was used as a direct communication medium and referral resource in this study. The Internet factor could be expanded to a Web page where students can retrieve information and study guides online, asynchronously. If students had the option to print only the information wanted as needed, the learning packet would not be so overwhelming. The learning packets bulged with information! For example, graphic organizers could be loaded onto the site and the student could pick and choose what worked best for him or her. The learning packet idea is good, but it needs to go beyond paper. Just as the research predicted, most students needed more scaffolding and support than the initial design incorporated. The idea of becoming an autonomous strategic learner was foreign to them. I will be an interested observer of my level one and two students. I am incorporating strategies from the very beginning.

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Appendix A

Study Habits and Learning Identity

How often do you study?

Every day_____weekdays only_____weekends only_____ just for tests_____other _____

How long do you study at each session?

2 hours _____ 1 hour _____ 30 minutes _____ 15 minutes _____ other _____

Where do you study? _____

Do you need a quiet place? _____

Can you study with the television on?_____

Can you study on the train or in a restaurant?_____

Do you like to study with friends? _____ Or, do you need to be alone?_____

Are you a visual learner?
Not at all. Somewhat very visual
1_____ 2_____ 3_____ 4_____ 5_____ 6_____ 7_____
Don't know_____

Are you an audio learner?
Not at all. Somewhat very audial
1_____ 2_____ 3_____ 4_____ 5_____ 6_____ 7_____
Don't know_____

Are you a kinetic learner?
Not at all. Somewhat very kenetic
1_____ 2_____ 3_____ 4_____ 5_____ 6_____ 7_____
Don't know_____

Do you like to use mnemonics to memorize vocabulary?
Not at all. Sometimes almost always
1_____ 2_____ 3_____ 4_____ 5_____ 6_____ 7_____
Don't know_____

Do you like to use paired associations to memorize vocabulary?

Not at all. Sometimes almost always

1_____ 2_____ 3_____ 4_____ 5_____ 6_____ 7_____

Don't know_____

Do you take notes in class?

Not at all. Sometimes almost always

1_____ 2_____ 3_____ 4_____ 5_____ 6_____ 7_____

Do you mark in your books to take notes?

Not at all. Sometimes almost always

1_____ 2_____ 3_____ 4_____ 5_____ 6_____ 7_____

If you do mark in your books, what do you use? Check all that apply.

_____highlighters

_____ink pens

_____pencils

If you do not mark in your book, which statement best fits you?

_____No, I like to keep my book looking neat and clean; so I make may own notes in my own notebook.

_____No, I remember without notes.

_____None of the above.

_____.

What is your favorite subject? _____.

In what subjects do you usually make your highest grades? _____.

In what subjects do you usually make your lowest grades? _____.

Do you use the Internet to do practice grammar exercises?

Not at all. Sometimes almost always

1_____ 2_____ 3_____ 4_____ 5_____ 6_____ 7_____

If so, what websites do you use?_____.

How would you describe your learning style?

_____

_____

Do you have any special study problems?

_____

_____

What are some specific things you need to learn in the next two weeks?

_____

_____

THIS PROJECT HAS BEEN REVIEWED BY THE INSTITUTIONAL REVIEW BOARD FOR THE PROTECTION OF HUMAN SUBJECTS AT THE UNIVERSITY OF TENNESSEE AT CHATTANOOGA.

Appendix B

Material for Learning Packet

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A Look at Parental Involvement in Education

Danelia Chappell

Education 590, Fall 2007

The University of Tennessee at Chattanooga

The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149) has approved this research project 08-052.

Introduction to the Problem

One of the most important aspects of teaching today is incorporating the involvement of parents in their children's formal education. That appears rather ironic as parents are typically the first teacher that any child ever encounters. Parents teach their children so much. Just learning to walk and talk is no easy feat. Parents take the role of teaching their children these abilities in stride. Yet, it takes months, or, sometimes, years of practice to accomplish these valuable skills. Parents provide teaching instruction in the form of modeling and constant positive reinforcement. While many parents may not consider themselves qualified to teach their children reading, writing, or arithmetic, they are still an extremely important part of the equation.

The literature about parent involvement in education reveals that, when the No Child Left Behind Act of 2002 was enacted, federal authorities made parental involvement a key element. They wanted to increase local efforts to boost achievements for children in school districts that serve low-income students. Therefore, schools receiving government funds under Title I must work with parents in developing a plan to establish what the district expects for parental involvement, and how the schools will facilitate those expectations. Districts that receive more than $500,000 in Title I aid are mandated to set aside at least one percent of it to encourage parental involvement.

Therefore, the push to involve parents in the education system has come to life. Teachers and administrators, all over the country, are looking for ways to entice parents into becoming more involved in their children's education. Children are bringing home newsletters from school that give parents information about what the school is doing. The newsletters tell parents about developmental practices of children according to age groups. They inform the parents about upcoming events and the results of activities recently accomplished. There are school handbooks

to inform parents about all the rules of the schools and the policies they maintain. The handbooks describe expected and unacceptable behaviors, and consequences for not following the rules. Schools use these formats to make an open invitation for parental involvement.

It is a parenting experience involving the desire to be more fully involved in an offspring's education that has inspired the work of this project. Some schools are not as welcoming to parents as their invitations seem to indicate. While taking classes in the field of elementary education, pre-service teachers are informed that parental involvement is an important aspect in the success of children. Having a child in school, and being told about the significance of involvement, can ignite a desire to volunteer in the classroom. Being told that it was against school policy to volunteer in the classroom of one's own child can be mighty discouraging. When ask to volunteer in a classroom other than their own child's, many parents will give up in the idea of volunteering at the actual school, altogether. Some will conclude that their time and efforts are best utilized assisting their child at home.

The research, data collections, and conclusions, herein, will comment on parental involvement programs across the nation, and the methods used to institute them. First, a review of the literature provides a picture of different attitudes parents might have about the situation and some means to alleviate their concerns. Some literature suggests that certain types of communication can make a significant difference in the effectiveness of the program.

Second, a review of data collected from parents of students in the Hixson, Tennessee area will provide a picture of their experiences with the public school their children were currently attending. This data was collected from parents of students enrolled in a fourth-grade class where student teaching had occurred. Observations that follow are based on the analysis of this data.

Finally, some commentary concludes this report. Together, the data collection and literature can help examine the issues, and look at several questions. How involved are the parents of students in this middle class community? What are some barriers that affect parent participation at school? How does the involvement by parents affect the academic success of the students at this particular school?

Review of Literature

In researching parental involvement, different types of literature are found. Much of the literature focuses on different socioeconomic groups. Other literature explains programs that are being utilized to increase parental involvement in a specific geographical location. The next type focuses on the parents, themselves, and reasons they may shy away from involvement in their child's education. All the types of literature seem to point to one giant conclusion. They seem to conclude what Ingram, Wolfe, and Lieberman present in their research (2007):

> Research and conventional wisdom seem to suggest that parent involvement is positively correlated with academic success for most students, and that the more parents are involved in a child's education, both at home and at school, the more academically successful the child will be. (p. 479)

Research data seems to indicate that parental involvement level and activities are on the rise. Parents are more likely to attend school meetings and events, or to volunteer in their child's elementary school than in middle or high school. According to Child Trends DataBank, produced by www.childtrends.org, "The definition of parental involvement was participation at least once during the school year in attending a general school meeting; attending a scheduled meeting with their child's teacher; attending a school event; or volunteering in the school or serving on a school committee" (2003, ¶ 1). Their definition does not match the one The Center

Newsletter uses. They define successful parental involvement “as active, ongoing participation of a parent or primary caregiver in the education of his or her child” (Meeting the Challenge of Involving Parents in School, 2005, ¶ 1).

This broader definition would include parents involved in their child’s education in ways that data does not always reflect. They help with homework or provide resources for the help to be procured. They read to, and with, their children. They model, discuss, and teach character education, helping to educate their child on appropriate social behaviors, therefore making the teacher’s workload easier.

One study found the data to show that, while parental-involvement activities are associated with stronger educational outcomes, it is not clear that these activities cause educational success. The study went on to say that involvement such as attending PTA meetings and volunteering inside and outside the classroom allows parents to exercise social control over their children. They are able to develop relationships with their children’s teachers and the parents of their children’s classmates. These relationships make it easier for parents to monitor children’s behavior and teacher’s practices. These parents have insider information. When there is a problem at school, they learn about it earlier. This study indicates that, while the link between parental involvement and a child’s cognitive development might be weak, parental-involvement activities can be effective in preventing children’s behavioral problems. This is no small feat, and may translate into cognitive advantages, in the long run (Ingram, et al., 2007).

According to a Michigan report, decades of research also indicate that, when parents are involved, it benefits the students in other ways. It reinforces the view in the child’s mind that school and home are connected. They begin to see that school is an integral part of the whole family’s life. These children have better school attendance, increased motivation, better self-

esteem, lower rates of suspension, decreased use of drugs and alcohol, and fewer instances of violent behavior. “Family participation in education was *twice* as predictive of students’ academic success as family socioeconomic status. The more intensely parents are involved, the more beneficial the achievement effects” (Michigan Department of Education, 2002, ¶ 3).

A study from Kentucky was performed in an area of low economic opportunities among minority students. The Wheeler Elementary School was found to be successful in education endeavors by including parents from the community. Communication with parents was ongoing and deliberate. The school published a bimonthly newsletter about the school, school team activities, and student achievement. It also included information about specific parental involvement activities. The really impressive part of the effort is that a 2-day conference between the parent, teacher, and student was scheduled. During this conference, an educational action plan was devised by which everyone was held accountable (Brown & Thomas, 1999). Students were highly successful in academic studies.

While parents are certainly their children’s first and most important teachers, some of them shy away from becoming directly involved with the school more than others. Their reasons vary. “If parents have minimal social networks, they tend to be less involved” (Deplanty, Coulter-Kern, & Duchane, 2007, p. 362). Other parents may not feel qualified. The educational level of the parent seems to be one determining factor in their involvement at the school their child attends. Schools, themselves, can make or break the level of involvement a parent contributes. “Evidence shows that many parents want to become involved but are not encouraged or do not have the open communication or support from the school to do so.” (Deplanty, et al., 2007, p. 362) Some parents are intimidated. “Parents who had negative experiences when they were in school may feel alienated by the school system and authority figures” (Brannon, 2007).

Some speak languages other than the one spoken at school. Others have commitments and responsibilities that preclude them from becoming involved on the campus their child attends.

Communication between the school and the parents can often have a huge influence on the situation. Sometimes, teachers and parents believe they are making a concerted effort to involve parents. Parents don't always see it that way. "Just saying, 'This event is happening,' doesn't tell parents that teachers want them to be involved" (Anderson & Minke, 2007, p. 320). Direct and specific invitations seem to be far more effective when it comes to engaging parents in involvement at the school. This is especially the case with minority parents and those with a lower income.

Data Collection and Results

Data Collection

Purpose

The purpose of this case study is to gather information about parental involvement and how that involvement affects student achievement levels.

Procedure

Students were given the surveys and asked to bring them back within 2 weeks. They were instructed to place the completed surveys in baskets labeled with the period of instruction they received instruction in science/social studies. The classes are balanced across skill level so this will allow insight into the effect of parental involvement in academic success.

Location

Copies of a single questionnaire were distributed to the parents of 78 students in the fourth grade at an elementary school in the Hixson community. The data from 2005 indicates

that 96.1% of the students scored proficient or advanced on the state's standardized achievement test in math; 98.3% were proficient or advanced in reading and language.

The Survey Instrument

The instrument consists of three sections of response items. The first section asks for general information from the parents such as age grouping and highest level of education completed.

The second section asks questions about the parents' feelings with regard to themselves and their involvement with the school. The responses range from 1 (Strongly Disagree) to 5 (Strongly Agree)

The third part of the questionnaire deals with barriers that affect a parent's participation at school. These questions are also geared to be answered with responses ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). There is an additional section for comments.

Parents were asked to respond to the questionnaire within 2 weeks. Most of the respondents turned in their completed surveys within approximately 1 week of receiving them.

The Respondents

Of the 79 questionnaires distributed, 28 were completed and returned. As the fourth-grade classes are leveled according to skill level, it was interesting to note that the number of returned surveys correlated with the skill levels of the students by which class period they were collected. The 33 students in the first period class are the brightest students in the grade level. They returned the most surveys, totaling 15. The 25 students in the class with the lowest skill levels returned three surveys. Of the 32 students in the class whose grades fall in the average range, 10 brought back the completed questionnaires.

Results

The demographic information from the surveys returned shows that the parent population is highly educated. Nine of the parents were high school graduates while one holds a technical or vocational license. Another has earned an associates degree of some nature. Ten of the parents hold a bachelors degree and seven of the parents have been awarded a masters degree.

One fact that grabs attention when focusing on the parents of children in the higher-skilled leveled classes is that five of them hold a masters degree. Eleven of the respondents strongly agreed that they feel welcomed and appreciated at the school. The remaining four respondents agreed that they have this feeling. When asked if they believe there are things they can do to help at the school, 12 respondents strongly agreed that there are. Two respondents agreed and one felt neutral about the ability to help at the school. Eleven of the respondents strongly agreed with knowing how they can be involved at the school, while four respondents simply agreed that they understood how to become involved.

A majority of the parents are comfortable communicating with the school administration, as indicated with 12 of the parents strongly agreeing to this, and the remaining three, agreeing. As for talking with the teachers of their children, 13 of the parents strongly agreed they felt comfortable doing so, while one respondent agreed, and another respondent felt neutral about the situation. With regard to feeling valued by the school, 11 of the parents strongly agreed to feeling this way, while 1 respondent agreed, and 3 respondents felt neutral about their value at school.

The remaining questions dealt with the heart of the matter. Thirteen of the respondents strongly agreed knowing how to be involved with their child's education away from school, while the remaining two respondents agreed that they know how to be involved. Only 10 of the respondents strongly agreed to being active at the school campus, while 3 respondents agreed that they were active, and 2 respondents felt neutral about their activeness at the school. The final

question in this section showed that 14 of the parents strongly agreed that they were, indeed, active in their child's education away from school, with 1 respondent agreeing to being active in education away from school.

With regard to barriers surrounding parental involvement, few of the parents had them. Some of the surveys reported that other young children at home would be a barrier to volunteering at the school. More of the respondents had job responsibilities that prevented their availability to the school on a regular basis. (See Figure 1).

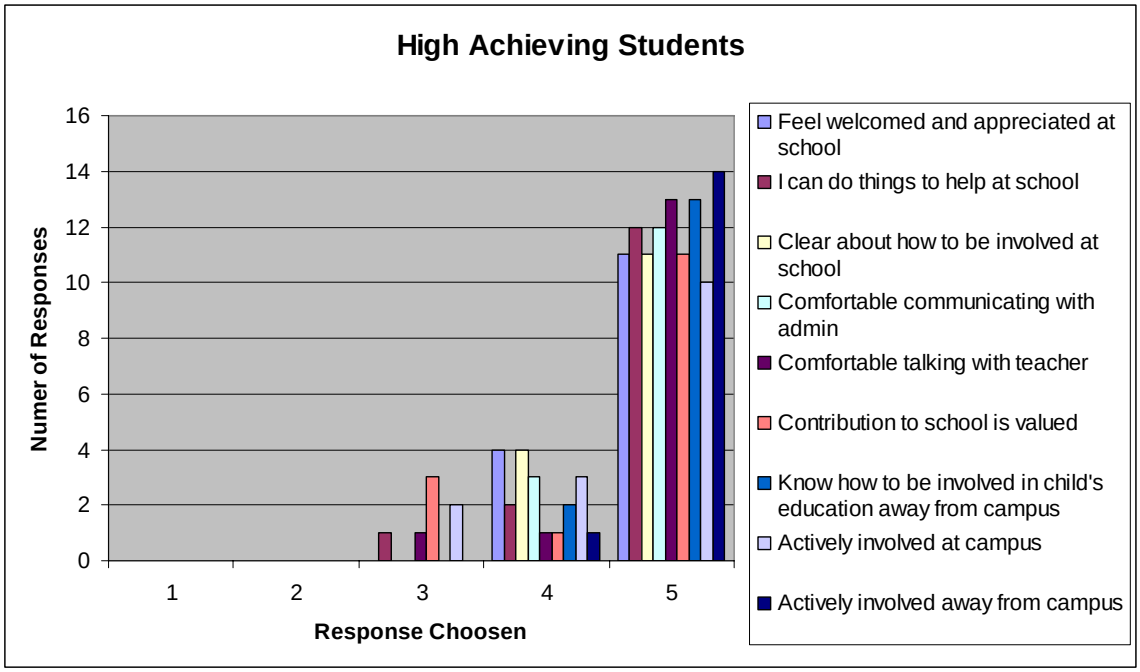

Figure 1. Responses from parents of high-achieving students.

The answers from the responding parents of students whose grades tend to average in the medium skill level were in contrast to the answers for the students who have high skill levels. More of them reported answers that indicate they do not feel as valued as do the parents of the higher-achieving students. They were not as comfortable communicating with the administration or the teachers of their children. Most importantly, there is a marked difference in their

knowledge about how to be involved in their child's education from those parents whose children are more successful on an academic basis. (See Figure 2).

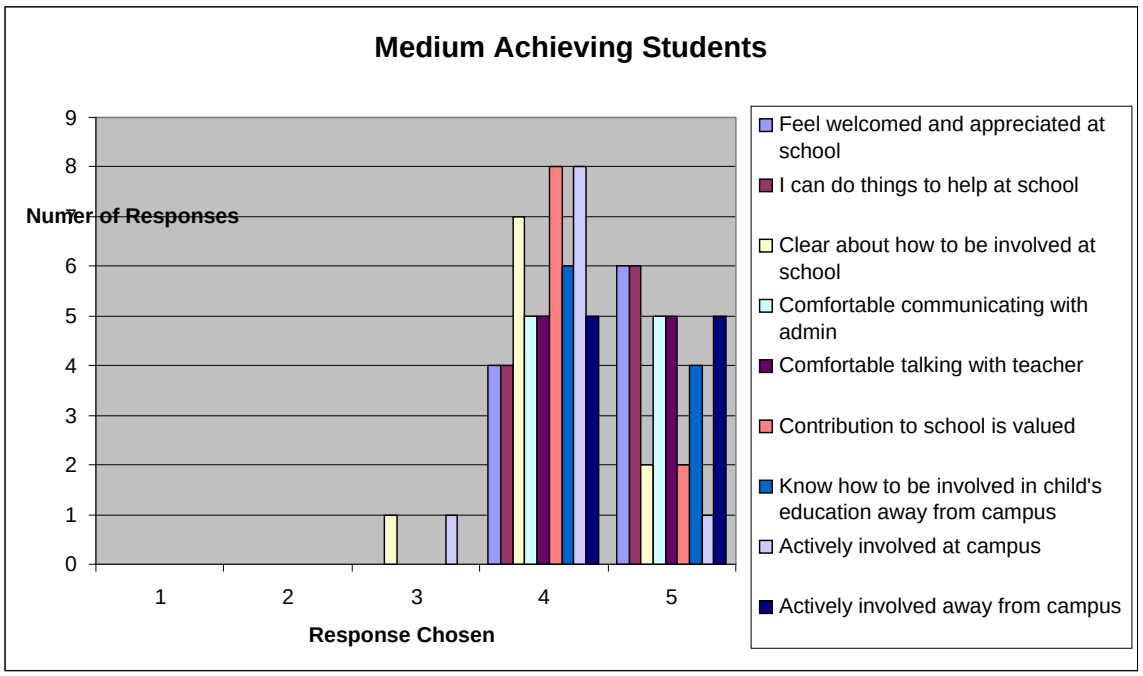

Figure 2. Responses from parents of medium-achieving students.

Students who are in the lowest level of academic success in fourth grade brought back the lowest number of surveys. This, in itself, tends to indicate that, maybe, the parents are not as involved as the parents of their peers. These parents were also less comfortable communicating with the administration of the school than the parents of students in the other two groups. (See Figure 3).

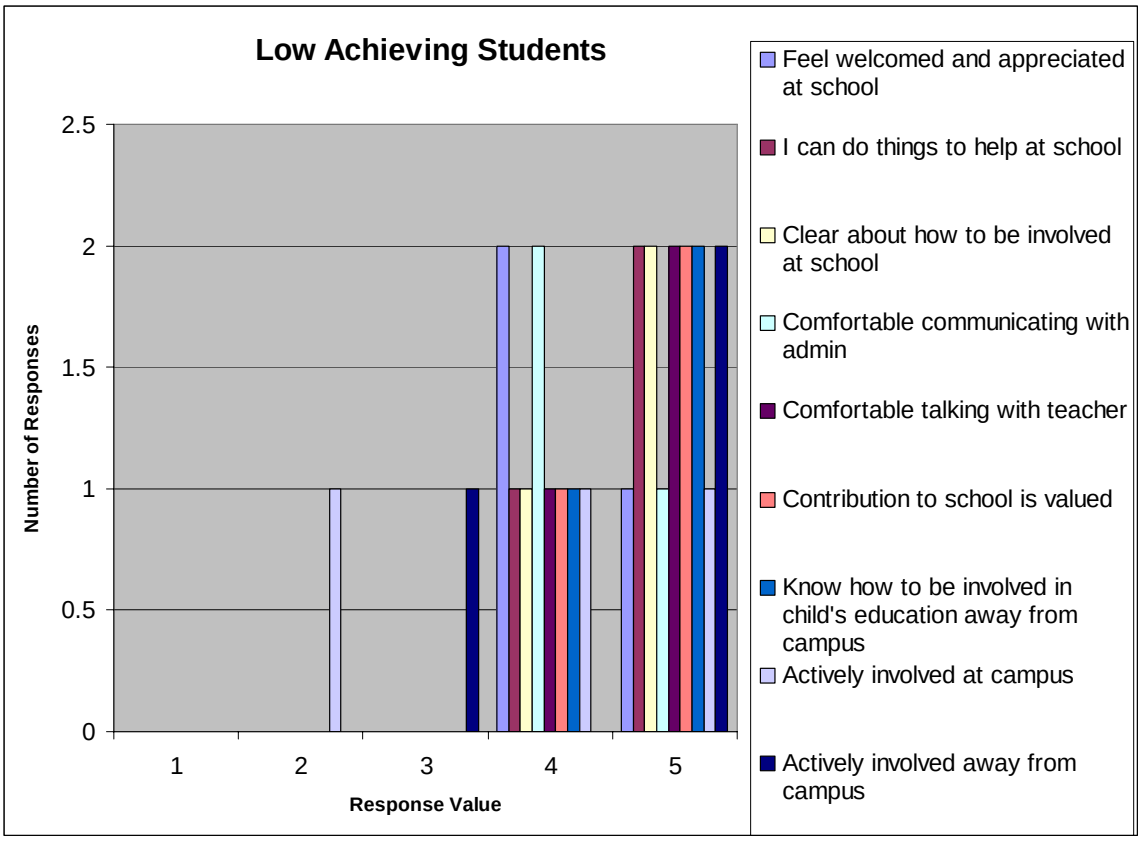

Figure 3. Responses from parents of low-achieving students.

Conclusions and Recommendations

Conclusions

When working with these children, it is readily apparent that they work hard to earn good grades. They want to achieve in their school work. The higher level students work hard and really want to do well. This could very well be as a result of the parental participation among this group. Many of their parents are highly-educated. The parents that are not as educated surely seem to believe in education and the doors it will open for their children.

This school is one that has a wonderful parental-involvement program. It meets or exceeds No Child Left Behind and Tennessee state goals and requirements in attendance and promotion. Parents routinely log over 15,000 volunteer hours per school year. The community is

strong, and many adults help to run programs at the school; provide assistance to regular classroom teachers; and are involved in every aspect of operating the school, including the extracurricular programs. The PTA has been awarded the highest percentage of membership in the county. They are an integral part of every day school life.

Recommendations

Other schools in the Chattanooga area could benefit from results of this parental involvement program. Listed among the school beliefs is one that would serve all schools well. It states that, "partnerships with families and the community strengthen the school." Their own 2005 TCAP study conclusions indicate that there did not appear to be a certain correlation between students scores and the individual students who were receiving free and/or reduced lunch. Their surveys of parents indicate satisfaction with the environment at the school. Ninety-six percent of the respondents agreed or strongly agreed to being treated courteously when they visit the school. With 99% believing that they are given many opportunities for involvement in the school, and 95% saying that communication from the school is adequate; they could serve as a model for other institutions in the county.

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Appendix A

PARENT INFORMATION (Please place an "X" next to the appropriate response.)

1. Age

Less than 20____ 21-35____ 36-50_____ 51and older_____

2. Marital Status

Single____ Married_____ Divorced_____

3. Highest Education Completed

High School Diploma/GED____
Technical/Vocational License _____
Associates Degree _____
Bachelors Degree _____
Masters Degree _____
Doctorate Degree _____

Place an "X" in the box that indicates your response

Questions 4 through 10 *Parent feelings, attitudes and beliefs about themselves, administrators, faculty and the school in general*	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
4. I feel welcomed and appreciated when I come to the school.					
5. I believe there are things I can do to help at my child's school.					
6. I am clear about how I can be involved at the school.					
7. I am comfortable in communicating with the school administrators.					
8. I am comfortable talking with my child's teacher.					
9. I feel that what I contribute to the school is valued.					
10. I know how to be involved with my child's education away from the school campus.					
11. I am actively involved in my child's education at the school campus.					
12. I am actively involved in my child's education away from the school campus.					

Questions 13 through 18 *Barriers that affect a parent's participation at school*	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
13. It is difficult for me to participate in parent-teacher conferences and/or other school activities.					
14. I have difficulties because of time constraints (job/other responsibilities).					
15. I have difficulties participating in school activities because of childcare (other small children).					
16. I have difficulties participating in school activities because of transportation.					
17. I have difficulties participating in school activities because of other matters.					
18. There are language/cultural barriers that interfere with my participation at my child's school.					

Any comments are welcome.

Reading in a Chunked Style Compared to Conventional Whole Page Style

John K. Cooper

Education 590, Fall 2007

The University of Tennessee at Chattanooga

The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149) has approved this research project 08-058.

Introduction to the Problem

This project is based, in part, on my personal frustration when students in the science laboratory environment constantly ask questions that are answered in the written procedures of a lab experiment. However, this problem is indicative of larger literacy problem. It is a commonly held belief that students do not read anymore in the quantity that is required. It is possible that students do read, in large quantities; although, they read in a different manor than previous generations have. Students, today, live in a fast and technological world. They live in a world in which information is thrown at them at a furious rate, with little regard to relevance. In order to adapt to this barrage of information, students can only take in small "chunks" of what they read. Small snippets from a Web news article or a billboard are examples of this form of communication onslaught. Also, in conjunction with the style of communication, students have begun to communicate with each other in this same "chunk manner."

Students text each other on the phone with phrases like BRB (be right back), TTYL (talk to you later), LOL (laugh out loud), ROFL (roll on the floor laughing), and other IM (instant message) speak abbreviations known to save time. These small, three-to four-letter chunks are still counted as reading, but it is reading in a different style. Students may have a whole conversation with someone via a text message, and none of the statements may be more than seven words long because of all the abbreviations. Today, this is the way students are reading. Students love to talk on the telephone, but they love texting each other even more. Young people today are enamored with technology and love the electronically-typed miniletters. They also communicate this way through email and instant messenger. Combining these electronic forms of communication constitutes reading on a much larger scale than what is generally accepted. The premise of this research is that, if a science lab procedure is given to students in this short

sentence form, they may be able to read and understand the instructions, just like they understand the conversation they have via electronically-typed messages. Because of this change in communication styles, when students see a whole page of written text, they can easily become intimidated and do not want to spend the necessary time to read the whole page. However, if students are given a whole page of written instructions in a chunking manner (only a piece at a time), they may be able to read and understand the exact same material. In this experiment, the goal is to test this concept. Can it make a difference for students to be more successful in understanding new information if that information (instructions) is given in small amounts (chunking) instead of in a full page of text?

Review of Literature

Today, students are not given much credit for actually reading. Students are text messaging and instant messaging each other all the time. Seventy-two percent of teens with cell phones say that text messaging is the most used feature (Cellular-News, 2007). Although the information comes in small amounts or chunks, they are reading more than they are given credit for actually reading.

Two opinions appear to be forming on this use of “Internet English.” Some believe that this is a slow decomposition of the formal English language. According to Lee, in a New York Times article, "Some teachers see the creeping abbreviations as part of a continuing assault of technology on formal written English" (Lee, 2002, ¶ 20). Conversely, there are those who regard this same "Internet English" not only as an example of how language is constantly developing and changing, but also as a type of literacy in and of itself, which can be capitalized on to engage students in more traditional learning. Bell believes, if a student is reading or writing it is going to help them (Associated Press, 2003).

One of the most engaging aspects about instant messaging technology and other popular technologies (IM, video games, etc.) is that they are potentially learning tools (O'Connor, 2005). They can be harnessed by educators to help students learn school-related content, as is illustrated by teachers who "encourage students to use messaging shorthand to spark their thinking processes" (Lee, 2002, ¶ 40). Fogarty, a sixth grade teacher, states, "When my children are writing first drafts, I don't care how they spell anything, as long as they are writing. If this lingo gets their thoughts and ideas onto paper quicker, the more power to them" (Lee, 2002, ¶ 40). Conversely, she indicates that "during editing and revising, she expects her students to switch to Standard English" (Lee, 2002, ¶ 40).

Jackson, a high school English teacher, "organized an online chat room where some Gaithersburg High students meet once a week to discuss literature and writing. The students are allowed to use Internet-speak in the chat room that would never be allowed in formal writing, but the online conversations are vigorous and intelligent" (O'Connor, 2005, ¶ 12).

At this point in time, it is not possible to determine specifically the effects of instant messaging (IM) on formal writing. However, one clear conclusion is that IM is becoming an important literacy in kids' lives, and, consequently, one that needs to be recognized by teachers (O'Connor, 2005). Close to 50% of teenagers, aged 12-19, have a phone, and well over 33% of those are text messaging (Kornblum, 2007). No matter how one looks at this new form of communication, it is here to stay.

"Also noteworthy is that 54 per cent of 13-34 year olds use SMS for social networking, while 44 per cent of the same demographic use text messaging for flirting or dating. Ten per cent of the same demographic said that they ended their relationship with their boyfriend or girlfriend by text messaging" (Exchange4media, 2007, ¶ 9). What does all this mean? Students are reading.

They may not be reading novels, essays, or non-fiction, but they are reading short abbreviated messages, they understand it, they write back, and this new form of communication is working. History has shown that those who try to prevent change end up getting rolled over by it. IM lingo is evidence of the evolution of language (Brown-Owens, Eason, & Lader, 2003). Teachers may need to realize that – for better or for worse – IM is widely used among many adolescents and is consequently a strong influence on student academic performance.

Data Collection and Results

Data Collection

Subjects

The students involved in this research project are 9th through 12th graders at a magnet school in Hamilton County, TN. There are 32 students in two blocks. First block, which runs from 8:55 a.m. to 10:15 a.m., has a total of 16 students. Eleven of these students are male and five of these students are female. Their ages range from 15 to 18. Four of these students are identified as special education students. Fourth block, which runs from 1:21 p.m. to 2:34 p.m., has 16 students. Ten of these students are male and six of these students are female. Their ages range from 14 to 16. Eight of these students are identified as special education students.

Methodology

The experiment was conducted using two separate classroom blocks working on the same experiment on the same day. Students completed a survey after the second lab (see Appendix A). The “Energy Roller Coaster” lab was selected for the first experiment. Students were to discover the conservation of energy principle. The first block class was given the lab instructions on the computer screen, reading a full-page instruction document. This was done to insure that the variable of reading from a computer screen was constant in all trials. Students clicked on a link

to the Web site in which all of the instructions were shown to them at once. They then began the investigation. A former teacher and I observed and assisted students during the course of their investigation. On a clipboard, we carried a checksheet (see Appendix B). If students asked a question or we saw that they were going off course from the lab, we would check a box on the procedural area of the checksheet. If they asked a question about the scientific content of the investigation, we would make a check in the content section of the checksheet. We kept track of common questions and the number of times the questions were asked. Both the other teacher and I walked to all areas of the classroom. We both interacted with all the groups. The students where given a lab answer sheet and an Excel spreadsheet to enter data and answer questions. They never had to understand how to do the calculations or create a graph in the lab. These were set up for them ahead of time. The goal was to have them focus on the content and running the lab correctly, not the minutia of data manipulation. Most groups needed 2 full lab days to finish the lab. On the second day, I was the only person making observations.

The second class, during fourth block, was given the exact same lab; however, the students read from a PowerPoint presentation. On this version of the lab, the language and instructions were the same; however, the students could only see one instruction at a time. They used buttons on the bottom of the screen to navigate through the experiment. They used the same Excel spreadsheet and answer sheet to complete their lab. The other teacher and I used the same checklist and observed and tallied questions and answers in exactly the same fashion as for the first block.

The second lab involved wave pools and viewing different waves. The procedures were reversed. The first block class was given the lab instructions on a PowerPoint presentation and the fourth block class was given the lab instructions all at once. This was done to cancel out any

variables dealing with the classes' two different reading and comprehension ability levels. Again, as on the first day, another science teacher assisted me with the observations. Two instructors assisted in the observation, and the data collection from the students on the 3rd day.

Results

First Block Results

Group 1: Three students preferred the chunking style lab, and one student preferred the standard style lab. Some of the comments were:

- The one instruction at a time was easy.
- Looking at everything at once was confusing.
- Preferred seeing all at once because they did not have to go back and forth with the one instruction at a time.

Observation checklist: Three content questions and two setup questions were asked with the chunking style. With the standard style, there were zero content questions and eight setup questions asked by the students.

Group demographics: Two of the students are classified special education and two of the students are advanced performers in the class.

Group 2: Two students preferred the chunking style lab, and two students preferred the standard style lab. Some of the comments were:

- All at once lab was completed quicker.
- Chunk style lab slowed me down.
- It's ok (chunking style). I really do not have a preference.

Observation Checklist: Four content questions and two setup questions were asked with the chunking style. With the standard style there were zero content questions and four setup questions asked by the students.

Group Demographics: Two students are average performers and two students are advanced performers.

Group 3: Four students preferred the chunking style lab, and zero students preferred the standard style lab. Some of the comments were:

- It was harder to understand (standard style).

Observation Checklist: This group did not do the chunking style. The standard style of lab required 1 content question and 10 setup questions.

Group Demographic: Three students were classified special education, and one is a low performer.

Group 4: Three students preferred the chunking style lab, and zero students preferred the standard style of lab. Some of the comments were:

- I liked it because you could just click and there was the next instruction (chunking style).
- I don’t know.
- It was a lot easier to do the one where you read one and understand (chunking style).

Observation Checklist: One content question and three setup questions were asked for the chunking style lab. For the standard style lab, there were 0 content questions and 12 setup questions asked by the students.

Group Demographic: Three students are classified special education.

Group 5: Two of the students preferred the chunking style lab, and zero students preferred the standard style lab. Some of the comments were:

- It was better and more fun taking your time (chunking style).
- I like it, it is ok (standard style) but I like the one at a time better (chunking style).

Observation Checklist: Zero content questions and three setup questions were asked for the chunking style. This group did not do the standard style lab.

Group Demographic: Two students are classified as special education.

Fourth Block Results

Group 1: Three students preferred the chunking style lab, and zero students preferred the standard style lab. Some of the comments were:

- I would like to see it step by step.
- It was too much and it was a bit confusing to do that all at once (standard style).
- It was a little hard because you had to keep calling the teacher to help (standard style).

Observation Checklist: One content question and six setup questions were asked for the chunking style. Two content questions and four setup questions were asked for the standard style lab.

Group Demographic: One student is classified as special education, one student is an average performer, and the last student is an advanced performer.

Group 2: Two students preferred the chunking style and one student did not take the survey. Some of the comments were:

- I did not like it all bunched up. It is harder to read (standard style).

Observation Checklist: Zero content questions and two setup questions on the chunking style lab were asked by the students. Zero content questions and three setup questions were asked on the standard style lab.

Group Demographic: Two students are classified as special education and one student is an advanced performer.

Group 3: Two students preferred the chunking style lab, and two students preferred the standard style lab. Some comments were:

- In small pieces because having it all at once is too much and a lot.
- It was not fun in small pieces
- Seeing it all at once made us work at a quicker pace on the computer.

Observation Checklist: Two content questions and three setup questions were asked on the chunking style lab. Three content questions and four setup questions were asked by students on the standard style lab.

Group Demographic: Two of the students are advanced, and two of the students are classified as special education.

Group 4: Two of the students preferred the chunking style lab, and one student preferred the standard style lab. Some of the comments were:

- Small pieces because it makes more sense because when it is all together you have to remember a lot more.
- All at once to see what is coming up.
- I would prefer to see small pieces because I think it would help me a lot and help me get my grade up.

Observation Checklist: One content question and three setup questions were asked for the chunking style lab. Zero content questions and three setup questions were asked for the standard style of lab.

Group Demographic: One student is classified as special education, one student is an average performer, and the last student is an advanced performer.

Group 5: This group only did the standard style; one student did prefer the chunking style. That student is special education classified.

Some of the lab groups did change a little bit between the two labs, however, students filled out the survey only once.

Conclusions and Recommendations

Conclusions

This experiment was a test to evaluate how students read and follow directions without classroom teacher assistance. In our fast paced age of information, many people only read parts of magazine articles or only the lead of a newspaper. Some brag that they have never read a full book or the complete newspaper. If they are not interested, they skip to the next area or skim for quick information. Does this change the manor in which we are reading today? In the small research group that was studied, the findings are not fully conclusive. However, what was found could make a major difference in lesson plan design. A need for strong, high-interest differentiation within the classroom stands out prominently.

Several components are evaluated in this study:

- the number of times questions were asked
- the variety of questions
- the repetition of questions
- students' learning abilities
- students' comments and concerns.

The data supports the conclusion that students with special needs and weak reading abilities are more successful in a science lab if directions and only small pieces of information are given. This is concurrent with how special education instructors assist students in resource learning centers. A special education instructor breaks down the information for the student. In the "chunking style lab," this is done without the aid of a special education instructor. Most classes have a minimum of 25-30 students. Individualizing is a difficult challenge, but this study reveals the importance of differentiation.

With students not classified as special education, the results were very mixed. When a student is reading at an appropriate reading level, he or she would remark that the chunking style was too slow. Those students preferred to read ahead to anticipate their next move. The research on this topic that is listed above does suggest a trend to a new style of reading, especially for those students who struggle with reading comprehension. The impact of these new forms of technology cannot be ignored when studying ways that students are receiving and processing information. This study supports the premise that the manor in which students receive and process information is turning into "bits and bytes," as it is the way in which computers store information. Differentiation is needed in all classes and is especially helpful in a science lab when students are working at their own pace on many parts of a problem. The individualization available in a science lab class is limited due to the size of the class, the heterogeneous grouping, and the teacher's ability to work with a class that has students at many reading levels. The "chunking style" lesson plan alternative offers many positive aspects to success for students.

Recommendations

This study reveals significant knowledge about students' reading styles, but it needs to involve more participants. Looking at only two blocks of students taking physical science is too

small of a sample. A weakness that is evident in the research is the lack of numbers of students and resources available to truly compare the results to individual students. Students who are successful with the “chunking style” early in the school year may very well be able to move ahead and not need this differentiation later in the school year. Their ability to process information and their reading comprehension level may rise due to the “chunking style” technique. Evaluating students two times each year may suggest ways to help students grow and improve in many areas. Offering the chunking style lab early in the school year, and later moving students to a lab that offers a full page of information, may reveal significant improvement in grade level reading. If the individual results could be viewed, as well as evaluating the numbers of a statistically significant number of participants, a more concrete conclusion could be drawn in the evolution of students’ reading styles. This could play a major part in changing the results from one area to another. This study strongly suggests that students who do better with a “chunking style” lab need to have their teacher provide that alternative opportunity, and students who like to move faster and more independently, need to have their teacher provide that opportunity. This level of teacher flexibility can be accomplished through the use of computer-aided teaching. Computers allow a student to choose which style of lab to view. Currently, no directly-correlated funding appears to be available for deeper research into this topic. However, there are a multitude of grant opportunities for literacy research.

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Appendix A

Student Survey

Group: _____

Post chunking style lab

1. Compared to seeing the whole lab at once how hard was it to read off the computer screen?
   One (1) being the hardest, five (5) being same as reading out of the book, and ten (10) being easier

1	2	3	4	5	6	7	9	9	10

2. Compared to seeing the whole lab at once or seeing the instruction in small pieces which did you prefer? *(circle the answer you think is best)*

   Whole lab at once One instruction at a time

3. How would you rate this lab at teaching you the objectives it stated in the beginning?
   One (1) being bad and ten (10) being the best

1	2	3	4	5	6	7	9	9	10

4. What did you think about seeing the lab only in small pieces?

   _____

   _____

   _____

   _____

   _____

   _____

5. What did you think about seeing the lab all at once?

   _____

   _____

   _____

   _____

_____

_____

6. Which style lab would you prefer to see and why? Please be complete.

_____

_____

_____

_____

—

Appendix B

Checklist

Date: _____/____/_____
Time start: _____
Time Finish: _____
Class: _____
Block: _____
Checklist

Chunking Standard

Group 1

(# of set up questions)

□ □

(# of content questions)

□ □

Common Questions:

_____

_____

_____

_____

_____

_____

Comments:

_____

_____

_____

_____

Group 2

(# of set up questions)

□ □

(# of content questions)

□ □

Common Questions:

_____

_____

_____

_____

_____

_____

Comments:

_____

_____

_____

_____

_____

Group 3

(# of set up questions)

□ □

(# of content questions)

□ □

Common Questions:

_____

_____

_____

_____

_____

_____

Comments:

_____

_____

_____

_____

_____

Group 4

(# of set up questions)

□ □

(# of content questions)

□ □

Common Questions:

_____

_____

_____

_____

_____

_____

Comments:

_____

_____

_____

_____

Group 5

(# of set up questions)

□ □

(# of content questions)

□ □

Common Questions:

_____

_____

_____

_____

_____

_____

Comments:

_____

_____

_____

_____

The Future of English Class: Internet Use Can Strengthen Students' Understanding of Literature and Allow for Cross-Curricular Connections in the 21st Century Classroom

Candra A. Cox

Education 590, Fall 2007

The University of Tennessee: Chattanooga

The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149) has approved this research project 08-053.

Introduction to the Problem

Within the past decade, there has been a plethora of research indicating the benefits of integrating technology (especially the Internet and WebQuests) in America's classrooms. Many studies have reported that the Internet is helpful for students in researching materials for homework, as well as providing students an opportunity to communicate on a broader scale with the outside world. More studies have found that using a WebQuest in conjunction with the Internet also enhances student learning. This study would take that research further and look at whether the Internet (especially WebQuests) is a beneficial tool for students in English and language arts classes. Two research questions to be answered are:

1) Is the Internet a good supplement for the English/language arts curriculum or should the students focus more on reading only textbook materials during class?

2) Will students respond favorably to Internet/WebQuest assignments that correlate with their reading assignments and will help demonstrate comprehension on their post-test?

Review of Literature

Hill and Ford (2000) advocate allowing students to use technology in the English classroom because it allows students the option of working creatively and interactively with their work, instead of just writing the standard English research paper (Hill & Ford, 2000, p. 22). Richards (2000) says that using computers in English classrooms can "validate the individual [student]" and encourage students to engage in more classroom discussions. (Richards, 2000, p. 38). Richards points out that, even though English

teachers may feel stressed with integrating technology and with the outside time it takes to make sure appropriate material are given to the students when using the technology, the time is worth the stress because of the benefits students receive (Richards, 2000, p. 40).

Bjourkland (2000) takes a similar stance to Richards. In her article, she points out the problems teachers face when trying to incorporate technology into the classroom. Some problems include outdated classrooms that cannot support computers, the time it takes to create a technological lesson consistent with the curriculum, finding something that is directly involved with the English topic being studied, and classroom management techniques have to adjust (Bjourkland, 2000, p. 43-44). However, Bjourkland points out that "when it is done wisely so that the computer isn't just a toy, [the computer] will prove to be a genuine tool for further critical thinking, analysis, problem-solving, and collaborative learning skills" (Bjourkland, 2000, p. 46). The National Council of Teachers of English (2003) also advocates the use of technology and the Internet in English classrooms, and encourages school districts and states to adapt the approved standards to allow more technology use all around. Karchmer points out that studies have shown that students are more likely to enjoy a technology-based lesson because it allows them to work more with peers, as well as promoting inquiry-based learning (Karchmer, 2001, p. 446).

Other authors have noted how the Internet can enhance a student's comprehension of the material, as well as raise standardized test scores. Bowman and Edenfield (2000) noted that students who participated in an enrichment study that used computers as part of the curriculum, showed higher achievement gains on standardized tests than the

students who did not participate. (Bowman & Edenfield, 2000, p. 117). Bowman, Pieters, Henry, and Mellendar (2002) show that WebQuests can be powerful tools for English teachers because WebQuests allow students to make connections with a topic, which therefore "inspires critical literacy" (2002, p. 89).

Data Collection and Results

Data Collection

This project will be conducted in correlation with the students' seventh-grade curriculum. The data will be collected during the curriculum unit about folklore and fables. While engaged in this study, students will be able to stay on task and still meet Tennessee's SPIs (state performance indicators). The students in this project will be able to determine meaning of unknown words through the use of context clues, make predictions about the text, and draw inferences. Students will complete a pre-test so that their prior knowledge can be assessed as to what folklore means and elements found in folklore (i.e., morals, lessons, etc.). While studying the folklore unit, the students will encounter tales of such historical figures as Davy Crockett. After finishing one tale about Davy Crockett, the students will take part in a WebQuest where they will review the life of the real Davy Crockett. After the WebQuest is completed, a post-test will be given to test the students' understanding of fiction versus non-fiction texts. [The post-test will be taken the day of the WebQuest because the students will have a comprehensive exam testing their knowledge of folklore and fables the next day.]

Subjects

Student participants will be from a seventh-grade language arts class (comprised of more than 30 students) at a suburban middle school in Bradley County. This

population was selected by the classroom teacher because the length of the class would allow enough time for completion of the project and ensure diversity amongst its participants. The students would be involved in this study for 1.5 to 2 weeks, depending on the speed the class exhibits finishing the folklore/fable unit.

Methodology

Pre-test of folklore review. The pre-test will test students' prior knowledge of folklore and fables. The questions are comprised of statements from their textbook. The test contains three multiple choice questions, four true/false questions, and one short answer question. Most of these questions will appear on the students' comprehensive exam at the end of the folklore unit.

Post-tests. The first post-test/survey will ask the students to think about and respond to the following questions:

1. What was your first impression of Davy Crockett while reading the story about him in your textbook?
2. How do you think the story about him and the real Davy Crockett compare and how are the two different?
3. What did you learn about folklore, in general (i.e., characteristics of it, morals or lessons the tales relate) when compared to real historical figures?

Another post-test these students will take is a cumulative test over the folklore unit (such as the other classes will take). The test is comprised of 26 questions. There are 25 multiple choice and true/false questions and 1 short response question (see Appendix A and B).

Pre-Test and Post-Test Analysis

The results of the pre-test and post-test from this class were higher than the other classes overall. The pre-test class average score was 81.5%. The overall grade for the pre-test was a 'C.' The post-test class average after the WebQuest activity was a 94.8%. This equaled an 'A' average on the post-test for these students. The class average increased by 13.3%. Though other classes also increased their scores through lecture only, this class averaged two letter grades difference (from a 'C' to an 'A'), whereas the other classes did not. Other than the WebQuest, this class received no extra help or instruction. On the post-test, there were five questions that dealt specifically with the Davy Crockett story they had read in class. Of the five questions, this class had fewer missed questions on all the questions.

Conclusions and Recommendations

When compared to other classes, the experimental class seemed to do better with the added benefit of the WebQuest. While participating in the WebQuest, students were engaged and interested in the content of the WebQuest. All but three students indicated in their surveys that they liked the WebQuest and would like to do more online, educational activities in the future (see Appendix C). The three students who did not like the WebQuest gave different reasons as to why they did not like the experience. A few of the reasons included: (a) the length of the lesson (it took the entire class period to complete); (b) the content of the lesson (Davy Crockett is "boring and dead, so why do I have to learn about him"); and (c) trouble understanding what to do (some students wanted to skip ahead and not read the content I asked them to read, so they were lost when it came to the next phase in the *Process* section of the WebQuest).

There are a few recommendations before repeating this study or including online activities for students in the English classroom. First and foremost, there must be adequate time for students to complete an online activity. Some students struggled to finish on time for the one class period allotted in the computer lab. Had the students had more time allowed than what the school could allow, more students would have enjoyed the experience and not felt as rushed to complete the activity.

Another recommendation would be to have more WebQuests on different topics and separate the students into teams to complete the WebQuests. Students would focus more if they knew they were completing a different WebQuest or activity online. In addition, the teacher could use time the next day in class and have the students discuss and tell their classmates about their topic and what they found

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Appendix A

Fables, Myths and Folktales Pre-Assessment

1. Fables are short tales that demonstrate _____.
   A. the storyteller's culture
   B. real events retold in new and exciting ways
   C. morals
   D. history

2. All of the following ARE elements of folktales EXCEPT ____.
   A. rites of passage
   B. short trips
   C. journeys or spiritual quests
   D. earthly or heavenly paradises

3. The story "Icarus and Daedalus" is _____.
   A. a fable
   B. a folktale
   C. a Russian tall tale
   D. a Greek myth

4. Fables and folktales are part of oral tradition.
   A. True
   B. False

5. Myths are considered to be _____ by its originators.
   A. told for entertainment
   B. truthful
   C. stories about hope
   D. important

6. Folktales began in the early 1900's.
   A. True
   B. False

7. List two fables and/or folktales

8. When a fable or folktale is written down and is no longer told orally, it loses its distinction as part of the oral tradition.
   A. True
   B. False

9. Historical figures like Davy Crockett and Daniel Boone are not part of the oral tradition because frontier stories are not part of the oral tradition.
   A. True
   B. False

10. All of the following are examples of oral tradition except _____.
   A. Davy Crockett
   B. Pecos Bill
   C. The fox and the grapes
   D. Jane Eyre

11. Myths _____.
   A. are fun songs told by the ancient Greeks.
   B. are considered to be false by their originators
   C. attempt to answer basic questions of the world
   D. were written by philosophers.

12. Folktales Never contain hyperbole.
   A. True
   B. False

13. When animals display characteristics that are human-like, the author is using which kind of technique.
   A. Personification
   B. Hyperbole
   C. Metaphor
   D. Oxymoron

Appendix B

Fables, Myths and Folktales Test

General Questions

1. Fables teach lessons called _____.
   A. the storyteller's culture
   B. real events retold in new and exciting ways
   C. morals
   D. history

2. All of the following ARE found in folktales EXCEPT ____.
   A. rites of passage
   B. short trips
   C. journeys or spiritual quests
   D. earthly or heavenly paradises

3. Fables and folktales are part of oral tradition.
   A. True
   B. False

4. Myths are considered to be _____ by its originators.
   A. told for entertainment
   B. truthful
   C. stories about hope
   D. important

5. Folktales began in the early 1900's.
   A. True
   B. False

6. When a fable or folktale is written down and is no longer told orally, it loses its distinction as part of the oral tradition.
   A. True
   B. False

7. Historical figures like Davy Crockett and Daniel Boone are not part of the oral tradition because frontier stories are not part of the oral tradition.
   A. True
   B. False

8. All of the following are examples of oral tradition except _____.
   A. Davy Crockett
   B. Pecos Bill
   C. The fox and the grapes
   D. Jane Eyre

9. Myths _____.
A. are fun songs told by the ancient Greeks.
B. are considered to be false by their originators
C. attempt to answer basic questions of the world
D. were written by philosophers.

10. Folktales Never contain hyperbole.
A. True
B. False

11. When animals display characteristics that are human-like, the author is using which kind of technique.
A. Personification
B. Hyperbole
C. Metaphor
D. Oxymoron

12. Ms. Cox said that this was the most important element in a tall-tale is ____.
A. plot
B. the exposition
C. the denouement
D. the setting

"Davy Crockett"

13. Davy Crockett was a (n) _____.
A. imaginary character
B. southern senator
C. real Tennessee frontiersman
D. former carpetbagger

14. According to the story, the most ordinary thing that Davy did in an extraordinary way was to _____.
A. skip
B. drink
C. sing
D. hunt

15. Davy called himself a _____.
A. shouter
B. screamer
C. yeller
D. teaser

16. One of the things Davy enjoyed most was a _____.
A. good barn dance

B. long nap
C. greased pig race
D. thunderstorm

17. Uses of dialect is common in folklore. The term “critter” means _____.
A. young child
B. baby
C. animal
D. insect

“Icarus and Daedalus”

18. The story “Icarus and Daedalus” is _____.
A. a fable
B. a folktale
C. a Russian tall tale
D. a Greek myth

19. In the myth, “Icarus and Daedalus,” Icarus was _____.
A. Daedalus’s friend
B. Daedalus’s pet bird
C. the king’s son
D. the son of Daedalus

20. *Cunning* means skillful or clever.
A. True
B. False

21. Daedalus built a labyrinth. A labyrinth is _____.
A. a term used to describe his special wings
B. a mechanical bird
C. a maze
D. a ramp

22. Cupid is the son of Venus.
A. True
B. False

23. A fledgling is a young bird.
A. True
B. False

24. Vacancy means emptiness.
A. True
B. False

25. Sustained means supported.

A. True
B. False

Short Answer/Essay: Choose one of the following options and write your answer in the space provided. Do not give me a summary of each story. I want your opinion with examples from the stories to back up your thoughts.

Option A: Compare and contrast one myth ("Icarus and Daedalus" or "Narcissus") and one folktale ("Davy Crockett" or "The Ballad of John Henry).

Option B: List four elements/characteristics that fables, myths, and folktales share.

Appendix C

Post WebQuest Survey

Directions: Please take a moment to respond to the survey. This survey is anonymous so feel free to be honest in your response.

(1) Did you enjoy the WebQuest as an alternative assignment? If yes, why? If not, please explain.

(2) Do you feel that you learned something more with the WebQuest than you would have without it?

(3) Would you like to use WebQuests and the Internet more during the school day in all your classes?

(4) How much have you learned about Davy Crockett through this WebQuest than what you knew before beginning the WebQuest?

An Analysis of Assigned Student Seating as an Effective Classroom Management Practice in a Middle and High School

Josef Damasch

Education 590, Fall 2007

The University of Tennessee at Chattanooga

The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149) has approved this research project 08-051.

Introduction to the Problem

Classroom management is a major area of teacher preparation in which new teachers often feel ill-equipped to deal with discipline issues in their first teaching positions. Interviews of more experienced teachers also reveal that they found their own educational instruction to be more content-driven, with less emphasis on classroom management. Merrett and Wheldall (1993) insist that, in order to be an effective teacher in the real world, one must quickly acquire the necessary skills needed to maintain a positive learning environment.

During my first student teaching assignment, I worked with middle and high school students, and noticed that some classes were much more difficult to manage. The cooperating teacher I worked with decided to try various types of assigned seating arrangements in an effort to break up talkative groupings and in order to create more diverse learning groups. The instructor continued to make adjustments where they were needed, and I observed that some of the classrooms saw a significant change in learning focus almost immediately.

The purpose of this action research project is to analyze if assigned seating is being used in other classrooms within the school, and to find out if teachers view it as an effective solution to classroom management issues. A project such as this one could be the first step in creating a dialogue so that teachers exchange ideas about common management issues and possible solutions.

Guiding Questions

1. Do teachers currently use assigned seating?
2. Do teachers view the use of assigned seating as reactive or proactive?

3. Are there reasons which prevent teachers from using assigned seating even if they think it (assigned seating) might be a good idea?

Review of Literature

A research study by Miech and Eider (1996) cited that classroom management frustration was a common reason for leaving the teaching profession among both new and veteran teachers. Teaching institutions are now being criticized for not adequately equipping new teachers with the classroom skills they need in order to be successful in their classroom environments. One review of both American and European classrooms identified classroom discipline as the number one problem for new teachers, followed by student motivation, (Stones & Webster, 1984). Research by Mastropieri and Scruggs (1987) has shown that teachers who are successful in the area of student achievement are also effective in classroom management. Brown (1998) states that research has shown that effective teaching requires extensive planning, dealing with diversity, and individual learning styles in order to decrease discipline issues.

Pedota (2007), a former New York City principal, cites that students, like adults, prefer structure and the predictable. A seating arrangement is a great tool for teachers because it provides an organizational system in which to learn students' names quickly, take attendance, and facilitate different types of instruction, both individual and group.

Stewart, Evans, and Kaczynski(1997) note that the physical arrangement of a class communicates subtle messages to students so teachers have to find the best arrangement which provides the optimum accessibility to all students. Students seated in the front and center of an arrangement tend to have more interaction with the teacher so arrangements should occasionally be changed to allow all students the same opportunity. Wrubel

(2002) recommends separating best friends, and pairing students who need more assistance close to students who focus well, providing role models. Wrubel advises continually monitoring placement, and making changes as necessary.

Research done by Kalinowski and Taper (2007) found that seat location had little effect on classroom grades, yet students who sat in the front of the class generally had higher GPAs than those students in the back. Educators should thoughtfully consider the options of group versus row seating for individual work. Hastings and Schwieso (1995) did a study which showed that student behavior was more on-task in the rows arrangement. Research by Kutnick, Blatchford, Clark, MacIntyre, and Baines (2005) shows that teachers often consider a combination of different grouping sizes, along with individual seating, to be an effective way to promote learning, on a lesson-by-lesson basis.

Dunne (2001) notes that educator, Fred Jones, believes that assigned seating is necessary because he believes that, if students are given a choice, they would pick the least suitable solution to a classroom management situation. There are educators like Phil Linton, a principal at the Anglo-American School of Moscow in Russia, who believes that students should be given some sort of part in establishing rules in order to increase their support of the rules. Some teachers suggest giving students some choice in the seating arrangement by asking them for a list of six names of students near whom they prefer to sit. During group activities, placing the most verbal students in different groups can promote leadership, suggests Novelli (1997).

Data Collection and Results

The purpose of this action research project is to evaluate the perceived effectiveness of the use of assigned seating as a form of classroom management. Both middle school and high school faculty were chosen at a local magnet school. Teachers were given a voluntary, anonymous questionnaire to answer.

A 10-question survey (See Appendix A) was left in the school mailboxes of 31 middle school and high school teachers. The anonymous responses were sealed by the participants in a manilla envelope and left in a collection box in the school's central office. Two of the responses are in narrative form, and six of the responses are illustrated in table format. Open-ended responses are presented in Appendix B.

Of the 31 teachers asked to complete the questionnaire, only 13 were returned, so there are some concerns about whether this study accurately reflects to chosen population.

Faculty responses indicated that 23% of the respondents teach mostly middle school students, 62% teach mostly high school students, and 15% teach an equal number of both middle and high school students. Responses indicated that 46% of the teachers currently use assigned seating in all of their classes, 31% use assigned seating in some of their classes, and 23% don't use assigned seating at all.

Responses indicate that 46.15%, almost half of respondents, remain neutral about always using assigned seating. Respondents indicate that 53.85% of teachers do not keep the same seating arrangements throughout the year. Most, 53.85% of teachers, admit to using assigned seating primarily as a reaction to classroom management issues. Most teachers, 53.85%, are neutral with regard to considering assigned seating as an effective form of classroom management, and almost half are neutral about its effectiveness within

their own classroom. Almost all teachers appear not to really know if their peers are using assigned seating in their classrooms.

The first open-ended question, number 9, asked what kind of obstacles teachers believe prevent them from successfully using assigned seating. Student resistance seems to be a common, reoccurring issue; teachers commented that students talk no matter where you put them.

The second open-ended question, number 10, asks teachers what kind of benefits they think assigned seating creates. The common responses were that assigned seating helps to break up talkative groups, and helps teachers to carry out administrative tasks more easily.

	n/percentage		
Responses	Strongly Agree	Neither Agree or Disagree	Disagree
Faculty	4	6	3
1. I have always used assigned seating as a form of classroom management.	30.77%	46.15%	23.08%
2. I assign seating at the beginning of the school term and I keep the same arrangement throughout the entire year.	1 7.69%	5 38.46%	7 53.85%
3. I only use assigned seating arrangements when classroom managements issues occur in my classrooms.	7 53.85%	4 30.77%	2 15.38%
4. I believe that assigned seating is an effective form of classroom management.	4 30.77%	7 53.85%	2 15.38%
5. Assigned seating arrangements helps me to achieve the kind of classroom management that creates the best learning environment for my students.	3 23.08%	6 46.15%	4 30.77%
6. I believe that most of my peers use assigned seating in their classrooms.	0 0.00%	12 92.31%	1 7.69%

Figure 1. Educator answers on assigned seating. Faculty respondent total is 13.

Conclusion and Recommendations

The purpose of this action research project was to evaluate the faculty perceptions about the effectiveness of assigned seating in their classrooms. The survey indicates that

the faculty is neutral in considering assigned seating as an effective form of classroom management; therefore, it makes sense that less than 31% of teachers have always practiced assigned seating and 23% of teachers currently use it in their classrooms.

More than half of the faculty responded to using assigned seating as a reactive solution to specific classroom discipline problems. A more proactive approach could possibly aid teachers in preventing some classroom management issues from initially occurring. Teachers may be able to create a more manageable classroom environment by starting the school year with assigned seating arrangements, and adjusting the arrangements as the classroom needs change
throughout the year.

Perhaps the faculty could talk with each other about the some of the issues they are comforted with in their own classrooms, and then share some of their classroom management best practices in an in-service workshop. This classroom sharing could potentially have a major impact on the success that teachers have in managing own classrooms and in the total school environment.

One of the biggest obstacles that could affect successful assigned seating is the physical environment that teachers inherit in their classrooms. Teachers have special challenges when they get a classroom without individual desks; this severely limits the seating options available to them. An open line of communication between the school's administration and faculty could provide some alternate seating resources.

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Appendix A

Faculty Survey

1. I teach _____

   a. mostly middle school students
   b. mostly high school students
   c. about the same amount of both middle & high school students

2. I have always used assigned seating as a form of classroom management.
   a. strongly agree
   b. neither agree or disagree
   c. disagree

3. I currently use assigned seating in____.
   a. all of my classes.
   b. some of my classes.
   c. none of my classes.

4. I assign seating at the beginning of the school term and I keep the same arrangement throughout the entire term.
   a. strongly agree
   b. neither agree or disagree
   c. disagree

5. I only use assigned seating arrangements when classroom management issues occur in my classrooms.
   a. strongly agree
   b. neither agree or disagree
   c. disagree

6. I believe that assigned seating is an effective form of classroom management.
   a. strongly agree
   b. neither agree or disagree
   c. disagree

7. Assigned seating arrangements helps me to achieve the kind classroom management that creates the best learning environment for my students.
   a. strongly agree
   b. neither agree or disagree
   c. disagree

8. I believe that most of my peers use assigned seating in their classrooms.
   a. strongly agree
   b. neither agree or disagree
   c. disagree

9. What are the biggest obstacles (if any) you've encountered that prevent you from maintaining successful classroom management using assigned seating?

10. What do you believe are some of the greatest benefits from using assigned seating?

Appendix B

Question 9:
What are the biggest obstacles (if any) you've encountered that prevent you from maintaining successful classroom management using assigned seating?

1.Students who don't care if they pass or fail.
2. None
3. Trying to form equally diverse groups.
4. Assigned seating is helpful, but it still will not keep students from being social. Some students are out of their seat more when separated from friends.
5. Resistance.
6.Students working on cooperative activities-constantly rotating seats.
7. Nothing!
8.
9. The kids know each other so well, that a "talker" will talk no matter where you put them.
10. HS students don't seem to really respond. They make new friends. MS they're chatty anyway.
11. Large classes and some students will talk no matter where you assign them a seat.
12. Sometimes it helps, sometimes it doesn't. It depends on the kids.
13.

Question 10:
What do you believe are some of the greatest benefits from using assigned seating?

1. Special needs students I.E.P.
2. It helps me learn students' names quickly.
3. The ability to form diverse groups(racially, intellectually, gender…)
4. I use assigned seating to encourage diversity in group work as well as to pair students for labwork.
5. I tend to use grouping versus assigned seating. I resort to assigned seating to break up students/groups of students that negatively affect each other or interfere with the other's learning.
6. Getting to know students.
7. Learn students' names faster. Improve setting in classroom for learning. Assign needed structure.
8. Taking roll easier!
9. Breaking up cliques.
10. Ease with attendance.
11. First, I don't use assigned seating with seniors(usually only with 9^{th} graders). Assigned seats help me to learn names quickly in large classes. I rotate tables every Monday so that no one group gets stuck at the back of the class.
12. Moving students away from their friends is usually the best way to keep kids from being distracted. They tend to pay attention better.
13. It separates "best friends" who are tempted to talk.

The Effectiveness of Differentiated Instruction

Sarah C. Fritch

Education 590, Fall 2007

The University of Tennessee at Chattanooga

The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149) has approved this research project 08-069.

Introduction to the Problem

Schools are facing many new challenges as they struggle towards meeting the state goals of the 21st century. Mainly, "No Child Left Behind," and the 1997 amendment, the Individuals with Disabilities Education Act, have brought on these challenges. This act specifies that, "states are required to provide a free appropriate public education to students with disabilities" (Bradley, 2006). This amendment applies not only to students with disabilities, but for all students, everywhere in the United States.

With the movement towards inclusion, teachers are finding it difficult to effectively reach such a diverse group of students with a broad range of academic needs. One technique teachers can use to reach such a diverse group of students is to implement differentiated instruction into the everyday curriculum.

The idea of differentiated instruction is not new, although many teachers do not fully understand or implement it. In 1998, a Title I school in North Carolina found that the majority of teachers were using only whole-group instruction and were teaching to the average student, and not meeting the academic needs of all students (Lewis & Batts, 2005). Students at the school were scoring at a 79% proficiency rate on the state end-of-grade tests, but, after being taught through differentiated instruction, 94.8% were scoring at the proficiency level (Lewis & Batts, 2005). There is much research supporting the qualitative and quantitative effects on student academic success when being taught through differentiated instruction (Lewis & Batts, 2005).

There are high demands on teachers to meet the academic needs of every student; with that in mind, whole-group instruction, and teaching to the average student, will not permit students to reach their full learning potential. Both inclusion, leading to a diverse

classroom, and the high demands set on teachers, make it evident that there is a great need for differentiated instruction to be implemented into the everyday curriculum.

The purpose of this study is to describe the effects of implementing differentiated instruction into the daily classroom curriculum. This study will take a closer look at the impact differentiated instruction has on elementary student academic success.

Review of Literature

Review of Literature

Due to the introduction of inclusion of students with disabilities and the reality of classroom diversity, today's classroom is different from those in the past. This is causing many more demands on teachers. These demands include state standards, No Child Left Behind requirements, IDEA, high-stakes tests, etc. Many schools still implement the "whole-group" and "one-size-fits-all" instructional approach in the daily classroom. Due to the demands on teachers, these instructional approaches alone, are no longer meeting the needs of a majority of students. Differentiated instruction is an approach that teachers can implement to reach every student at his or her level, while meeting the demands put upon them.

The concept of differentiated instruction is not new, but has been used for the last two decades (mainly with gifted and talented students) (Theroux, 2004). It has, however, recently become a strategy that can be implemented into any classroom and can be beneficial for every student. The concept of differentiated instruction is based on the fact that students each differ in their readiness level/academic abilities, learning styles, personal interests, background knowledge and experiences, and levels of motivation. It challenges each student to reach his or her full learning potential, while, at the same time,

valuing each student for what he or she is capable of doing. A differentiated classroom will contain students who are all equally engaged in learning activities that are appropriate for their learning needs. The essential concept may be the same for each student, but the complexity of the content, the learning activities, and/or the products may vary so that all students are challenged, but not frustrated (Theroux, 2004).

By definition, differentiated instruction is to recognize students varying background knowledge, readiness, language, preferences in learning, and interests, and to react responsively by meeting their academic needs (Hall, 2002; Edwards, Carr, & Siegel, 2006; Tomlinson, 2000). Instruction can be differentiated based on a student's readiness level, personal interest, or learning profile or style. A student's readiness level is measured by determining his or her current knowledge, understanding, and skill related to what is being studied. Personal interest is obvious when a student is observed enjoying a learning activity or what he or she chooses to do in his or her free time. A student's learning profile or style is his or her preferred method of learning.

The rate of retention in the United States is estimated at about 15 percent each year. Overall retention rates have increased by 40 percent over the past 20 years, meaning that 30 to 50 percent of children have been retained at least once before the ninth grade. The highest retention rates are found among poor, minority, inner-city youth; English-language learners; students that have attention problems; students from single parent homes; or students that change schools often (National Association of School Psychologists, 1998). These high rates of retention call for drastic changes in schools and in classroom instruction that can more effectively reach all students.

Differentiated instruction is one approach that, many agree, can allow students to reach their full learning potential. The key to having a successful classroom through implementing differentiated instruction is to remember that all students should be offered choices for what and how they learn, and that they are matched with activities that are compatible with their interest, readiness level, or learning style. By changing teaching strategies often, students are more frequently given the chance to learn in a way that is compatible with their own learning preference, while, at the same time, expanding on different ways to learn, other than through their learning style. Theroux (2004, p. 3) states:

> If we (teachers) are to be responsible for what a child learns, then it is essential that we understand what (s)he knew at the beginning and how to move him/her forward from that point in a successful manner. This means we need to understand how each student learns best. It also means that we need to build on what they already know.

A recent study found that students who were given more challenging, higher-quality, tougher assignments that incorporate critical thinking outperformed less-challenged students on standardized tests, and they posted learning gains 20 percent higher that the national average (Johnson, 2001). A study from the U.S. Department of Education found that high-achieving schools with disadvantaged student populations, where learning standards were integrated along with demanding coursework and high expectations, resulted in a marked improvement in student performance (Johnson, 2001).

Sloan (2004) states:

> When permitted to learn difficult academic information or skills through their identified preferences, children tend to achieve statistically higher test and attitude scores than when instruction is dissonant with their preferences. On the other hand, others contend that this idea is impractical, as well as time consuming, and students should learn to adapt to the instructor's teaching style. Otherwise, students are not being challenged to acclimate themselves to various learning environments that would empower them for life after graduation.

Although there are conflicting views, there is much documentation and many personal testimonies supporting the theory that differentiated instruction can improve a student's content and skill knowledge. Also, although differentiated instruction has been used in some classrooms for many years, there is not adequate research data that differentiated instruction is the best approach to student success.

One of the national education goals is that every school in the United States will make certain that all students learn to use their minds so they will be prepared for responsible citizenship, further learning, and productive employment (Doolan & Honigsfeld, 2000). Doolan and Honigsfeld believe that a critical approach to meeting this goal is by implementing differentiated instruction by addressing student learning styles. A student's learning style is determined by the way he or she concentrates on, perceives, processes, internalizes, and retains new information (Doolan & Honigsfeld, 2000; Sloan, 2004). When students are being taught through instructional methods that do not address their learning style, they do not succeed in mastering the subject quickly, if at all. This can lead to frustration for both the students and the teacher, and may even cause students to dislike school, which can lead to behavioral problems, retention problems, and

dropping out (Doolan & Honigsfeld, 2000). When teachers are able to identify student learning styles and implement them into the instructional activities, results show that student academic achievement is higher, and that students will learn more quickly and with greater ease (Stevenson & Dunn, 2001; Sloan, 2004). The staff from an elementary school in Kansas saw improved student attitudes, healthier work habits, and higher test scores after instructional methods were implemented that matched student learning styles (Doolan & Honigsfeld, 2000). At an elementary school in North Carolina, staff saw standardized test scores on the California Achievement Tests (CAT) in reading and math improve from the 30th percentile in 1986 to the 40th percentile in 1987, and, in 1988, they increased to between the 74th and 77th percentile (Doolan & Honigsfeld, 2000). The next year, the scores were among the highest in the state.

A main concern today's teachers have is meeting the diverse needs of individual students. In 1998, administrators in a North Carolina Title I school found that the majority of teachers were using only whole-group instruction that taught to the average student, and that students had an overall 79 percent proficiency rate on state end-of-grade tests (Lewis & Batts, 2005). Despite the diversity of the classroom, teachers were unaware of how to reach each student effectively. Tomlinson (2001) created a differentiated approach that identified three curriculum elements that can be differentiated: content, process, and products. Hall (2002) found that the best way to illustrate this concept is through a chart, adapted from Oaksford and Jones.

Lewis and Batts (2005) found that the current curriculum does not have to be changed, but adjusted, to accommodate these elements. Teachers need to adjust what is being taught, the activities, and the end results showing student mastery. Hall adds that

teachers need to meet each student where he or she is, and assist in the learning process. After the school in North Carolina implemented the differentiated approach, based on Tomlinson's ideas, the students scored at a 94.8 percent proficiency rate on the state end-of-grade tests (Lewis & Batts, 2005). In contrast, Castle, Deniz, and Tortora report that there is evidence from the past 20 years revealing that grouping students by their readiness level can have negative effects (2005). They found these effects to be most prominent in low-achieving and minority students. There were five major negative impacts noted in the Castle et al. research findings, including lack of student mobility across groups, poor quality or low-level instruction in low ability groups, low student self-concept, lack of educational equity, and low student achievement (2005). In order to reduce these negative effects, Castle et. al found that flexible grouping, instead of groups based on readiness levels, should be implemented, allowing students to regroup, based on needs and continuous assessments. Flexible grouping, along with other differentiated instruction methods, show positive effects for students, particularly below-goal students (Castle, Deniz, & Tortora, 2005). The teachers in the Caste et al. study noted improvements in student scores, comprehension of learning tasks, and confidence. On almost all tests, the percentage of below-goal students who reached mastery exceeded the district goal of 10 percent (Castle, et al., 2005).

There are many ways instruction can be differentiated. An inclusion, laboratory school found that differentiated instruction was effective through tiered lessons. A tiered lesson is a differentiation strategy that addresses a particular standard, key concept, and generalization, but allows several pathways for students to arrive at an understanding of these components based on their interests, readiness, or learning profiles (Adams &

Peirce, 2004). The authors of the article found eight steps that proved to be useful in tiered lessons:

1. Identify the grade level and subject for which you will write the lesson.
2. Identify the standard (national, state, district, etc.) you are targeting.
3. Identify the key concept and generalization. Ask, "What do I want the students to know at the end of the lesson, regardless of their placement in the tiers?"
4. Be sure students have the background necessary to be successful in the lesson.
5. Determine in which part of the lesson (content, process, product) you will tier.
6. Determine the type of tiering you will do: readiness, interest, or learning profile.
7. Based on your choices above, determine how many tiers you will need and develop the lesson. Be sure that students are doing challenging, respectful, and developmentally appropriate work within each tier.
8. Develop the assessment component to the lesson. The assessment can be formative, summative, or a combination of both. (Adams & Peirce, 2004, ¶ 9)

Another method Tomlinson and McTighe recommend is Understanding by Design (UBD). "UBD is an instructional development model that asks teachers to begin with the design of clear statements of what students are to learn, followed by the design of an assessment, followed by the design of a learning activity that pushes each student to the height of his/her potential" (Loertscher, 2006).

Why are all teachers not implementing differentiated instruction into their curriculum? Ninety percent of teachers do not know how to differentiate in a mixed ability setting (From theory to practice, 1999). Studies have shown that teachers are more than likely to teach the way they were taught. Most current teacher candidates were not

taught by elementary or high school teachers who used differentiated instruction. A small group of elementary and special education faculty decided to form a task force after attending a meeting that reported the results of a student teacher exit survey showing that the candidates did not feel that they were adequately prepared to effectively teach diverse learners. The candidates reported that their professors, supervisors, and master teachers seldom encouraged the implementation of differentiated instruction. The faculty decided to start a project named 3D, The 3 Dimensions of Diversity for Inclusion. The three dimensions were recognized as academic, behavioral, and cultural. These dimensions were recognized as aspects that need to be heavily addressed in all teacher education programs. Teacher education method courses in the past involved, "drab lists of strategies to be memorized apart from any teaching-learning context and are interspersed with requirements to write units and lesson plans according to some rigidly specified format. If this is not enough, the student spends too many hours listening to outdated lectures delivered by someone who has little touch with the real world of school for many years" (Edwards et al., 2006). Teacher candidates have been taught Vygotsky's theory of scaffolding to create lessons that feature Tomlinson's idea of differentiated instruction, and then enter schools that still implement the one-size-fits-all approach and resist new changes. Edwards et al. (2006) feel that teacher candidates, "need to experience for themselves the processes, benefits, and challenges of new methods. If nothing else, they should have an opportunity to view the inner-workings of a distinctly different paradigm than one that is more familiar." It is a teacher's responsibility to utilize instructional methods that meet the student's needs. Edwards et al. voiced that teacher preparation courses must more effectively prepare candidates to transform the one-size-fits-all

approach to the differentiated instructional approach in order to see higher student success rates.

There are many other reasons why or why not teachers implement differentiated instruction into their curriculum. Wertheim and Leyser (2002) found several studies investigating general educator's views and perceptions of differentiated instruction. The findings were as follows:

- Teachers stated preference for instructional practices that they implemented directly in the classroom.
- Teachers rated adaptations related to the social or emotional well-being of mainstreamed students as being more desirable than those requiring curricular or environmental adaptations.
- Teachers were more willing to consult school professionals about academic problems than about behavior intervention strategies.
- Teachers reported using typical or routine classroom accommodations they might make for any student. The primary mode of teaching reported was whole-group instruction. Teachers made few adaptations for individual student needs.
- Teachers perceived or rated the desirability of implementing a variety of instructional adaptations for students with disabilities in general education classrooms extensively higher than the rate of their probability.
- Teachers stated that they used positive or reinforcing interventions for classroom behavior problems rather than punitive interventions or those that include punishment.

Curriculum is no longer defined by what a teacher will teach, but by what a student will be able to demonstrate. Teachers must be willing to create a classroom that celebrates diversity and allows children to reach higher standards. Not all children learn by the same methods; therefore, teachers must implement differentiated strategies, enabling more students to reach their full learning potential. The benefits of differentiated instruction far outweigh any drawbacks. A teacher from the Lewis and Batts (2005) study explains, “Even though it takes a lot of time upfront to plan for a differentiated classroom, the benefits have been proven. Each year that I get better at planning differentiation, I can see an improvement in the outcomes of my students.” Although there is a lack of actual statistical evidence for the effects of differentiated instruction, there is much testimony that the method is successful.

Data Collection and Results

Data Collection

This study involved a group of 21 first-year, kindergarten students in a rural Hamilton County school. The study was done over a 2-week period and concerned the topic of the five senses. It included two different types of instruction, whole-group and differentiated, and a post-test after each instruction. Students were given a pre-test and a post-test over the material and were asked the following questions:

- What body part do we use for our sense of sight?
- What body part do we use for our sense of hearing?
- What body part do we use for our sense of smell?
- What body part do we use for our sense of taste?
- What body part do we use for our sense of touch?

- Do you know the four tastes our taste buds detect? Name them.
- Can you name the five senses?

For the first five questions, the students had a group of pictures to look at and were asked to point to the picture that answers the question. For the remaining two questions, the students were asked to orally answer the questions.

A traditional, whole-group lesson was conducted to introduce the five senses, the body part each sense uses, and the four flavors the tongue detects. The concept was introduced through the reading of a book that explained each sense and gave examples of how it is used. This was followed by a brief lecture further explaining the five senses and their importance. The four flavors were introduced through a brief lecture and then students were given the chance to name some foods that pertained to each flavor. At no point in the lesson was there any type of activity for the students to be involved in, or differentiation based on learning level or learning style.

During the following week, students studied the five senses more in depth through differentiated activities. Because this study was done with kindergarten students during the first 9 weeks of school, the students had not been placed in any type of leveled group or learning style group. The lessons were differentiated in that they each contained activities that pertain to most, if not all, of the learning styles, and most lessons contained activities that were learning-ability leveled. Each sense was discussed individually through a lesson, on different days, and in much detail. The sense was once again introduced and discussed, and the students then participated in an activity.

Lessons were differentiated from the traditional whole group instruction in that they were planned to accommodate student learning styles. Each activity was hands-on,

but also contained visual, auditory, and kinesthetic aides. The activities were set up to meet student learning styles.

Results

A pre-test was administered to students before any lesson was conducted discussing the five senses and the four tastes.

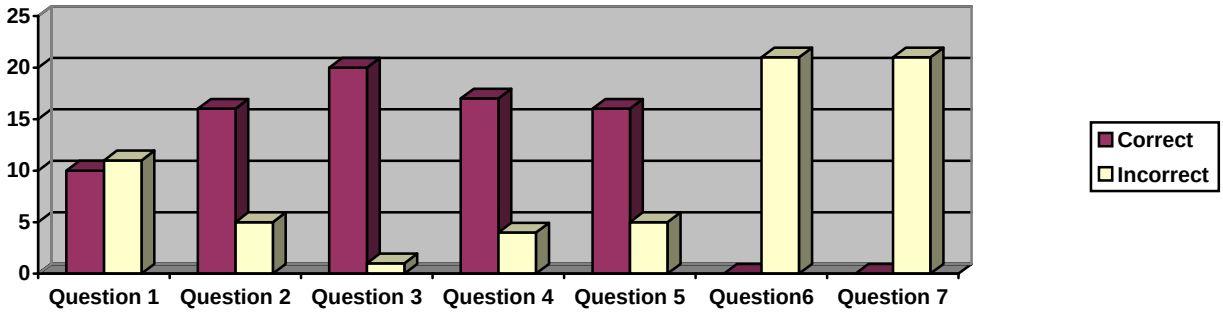

Figure 1. Pre-test results showing student knowledge about the five senses and the four tastes.

It was evident that almost an equal number of students did not understand the concept of sense of sight or had not heard the term "sight." Most students understood what body part they use for their sense of hearing, sense of smell, sense of taste, and sense of touch. There was not a single student who knew what four flavors the taste buds can detect. Likewise, not a single student could name any of the five senses. The mean for the pre-test was 28, being that there were 14 possible answers with each answer worth 7 points. The median was 30 and the mode was 30.

After the whole group instruction, a post-test was given to gather any amount of learned information. The post-test was the exact same test as the pre-test. There was much improvement.

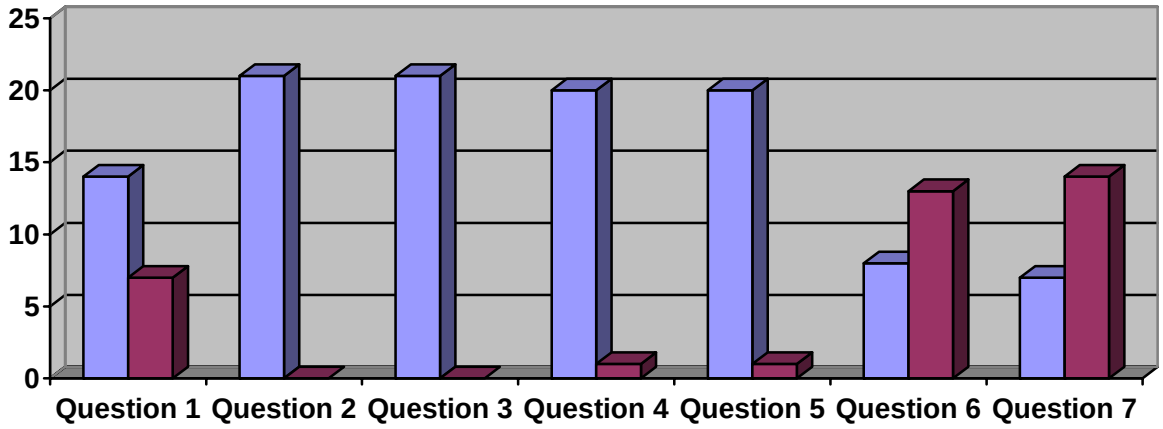

Figure 2. Post-test 1 results.

It is evident that the number of students who, overall, answered the questions correctly increased. Students were still not grasping the full concept of the four flavors the taste buds detect, or were they able to name the five senses without looking at pictures. The mean was 45, a 61% increase from the mean on the pre-test. The mode was 30 (the same as the pre-test mode), and the median was 41.

After further instruction, a second post-test was given to gather any increase in the amount of learned information. The second post-test was the exact same test as the pre-test and the first post-test.

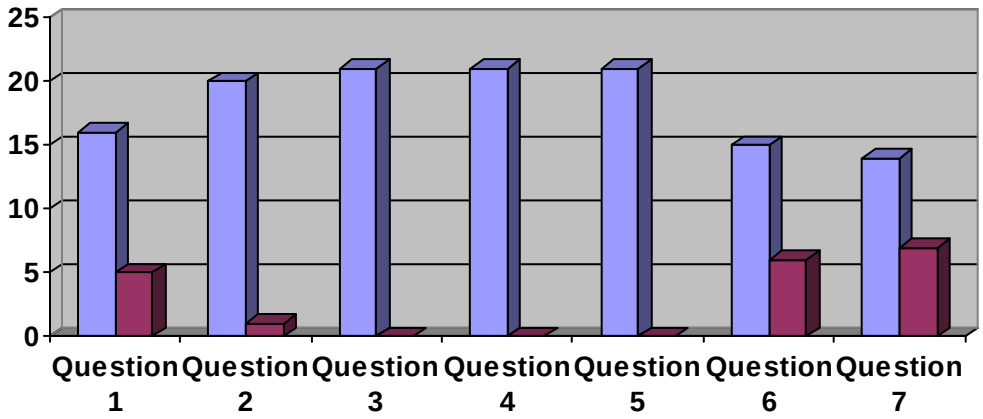

Figure 3. Pre-test 2 results.

Students seemed to fully understand the concepts of sense of hearing, smelling, tasting, and touching. There were still five students who did not grasp the concept of sense of sight or understand the word “sight.” There was much increase in the number of students who could name the flavors the tongue detects. Many students could not recall all of the flavors but could recall some of them. There was also an increase in the number of students who could name some of the five senses. The mean was 68, a 51% increase from the first post-test, and a 142% increase from the pre-test. The mode was 93, and the median was 72.

Overall, there was much increase in the number of students who answered correctly after further instruction, as compared to the number of students who answered correctly before any instruction. It is evident, by the results of the second post-test, that the majority of students know and understand the five senses.

Conclusions and Recommendations

As compared to whole group instruction, differentiated instruction seemed to be the most effective type of instruction. This is evidenced by the result comparisons between the pre-test and the first post-test, compared to the pre-test and the second post-test.

Students were given the first post-test after the whole group instruction. There was some improvement in the results of the test compared to those of the pre-test. However, it was evident that students were still not grasping the full concept of the 4 flavors the taste buds detect. Students were also still not able to name the five senses

without looking at pictures. Although students could identify which body part they use for each sense, it is evident that the concepts needed to be retaught through another form of instruction.

During the following week, each sense was taught through differentiated instruction. Students were once again given a post-test. There was some improvement in the results compared to those of the first post-test, and much improvement in the results compared to those of the pre-test. Several students still did not seem to grasp the concept of sense of sight. They did not understand the word “sight” when used to describe the sense, but did understand that their eyes are for seeing. The word “sight” still needs to be further introduced through a vocabulary activity.

Overall, the differentiated instruction seemed to be the most effective form of instruction, allowing students to grasp the concept of the five senses and the flavors the tongue detects. The majority of the students were able to answer the post-test questions correctly. In order for the whole class to understand the five senses, more time needs to be spent on each sense with at least two differentiated lessons pertaining to each sense, with one lesson differentiated based on learning styles, and the other differentiated based on the student’s learning level.

As previously stated, differentiated instruction is not a new concept. It does appear to be the most effective form of instruction. It is easy to tell teachers to teach their students through differentiated instruction, but it is easier said than done. To effectively teach students through differentiated instruction, students need to be taught in small groups and participate in small group activities. These small groups need to be based on learning style or learning ability or level. Sometimes, it is best to keep students at the

same learning level in the same group, and sometimes it is best to mix up the groups so students can help one another.

In the day and time of technology, there are many resources available for teachers to differentiate instruction. There are multiple resources for hands-on activities such as math and reading manipulatives. Technology is a simple way to differentiate instruction.

For differentiated instruction to be effective, teachers must constantly progress monitor students, especially if grouped by learning ability. Students who learn effectively through small groups will most likely need to be regrouped as they advance. For differentiated instruction to be effective in lessons that must be taught as whole-group, it is best for the lesson to contain something to meet each student's learning style, e.g., a visual, a kinesthetic activity, etc.

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"How is My Art Room's *Feng Shui*?" Effectively Structuring Art Materials

Haylee Hughes

Education 590, Fall 2007

The University of Tennessee at Chattanooga

The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149) has approved this research project 08-055.

Introduction to the Problem

"However the ingredients for learning remain the same: the teacher must be fully alive and the learning environment must be both stimulating and peaceful" (Lomasney, 1996, p. 7). Think back to your elementary and/or secondary art classroom. What do you remember most about the structure and environment? Was the classroom's lack of organization and functionality overwhelming? Were you able to concentrate and focus on your assignment? Although art has always been one of my favorite subjects, when I think back to my elementary and secondary art classrooms, I am reminded more of a jungle than a creative learning environment. Perhaps you can relate to the crowded, cluttered, undisciplined climate that I experienced. I cannot say that I did not sometimes enjoy the lax environment, and work could be accomplished if you had good concentration skills and self-motivation, but, overall, we must have wasted half of each year weaving our way through the maze that was our classroom. Now that I am about to embark on a career as an art teacher, I am faced with challenging student creativity and individuality, while promoting structure and focus in my classroom. It is my belief that the lack of organization concerning art materials directly leads to a student's inability to complete work in a timely manner, and it is this concern that I will be trying to improve.

Review of Literature

The purpose of my action research paper is to address students not turning in work on time due to the lack of organization of art materials in the classroom. Compared to early ideas that relied heavily on the individual teacher's suggestions and psychological theories composed outside the classroom, the past 15-20 years have

improved research on organizing and managing a classroom, and it is this information upon which I will build my study.

The literature suggested that one way to solve the lack of organization in an art classroom is to change the physical layout. The structure and organization of a classroom is often overlooked by education professionals, but reflects a teacher's instructive philosophy and goals. Excluding the limitations of school policies and equipment, such as wall color, student desks, chair furniture, and immovable furnishings, the physical artifacts of the classroom should mirror the teacher's attitude toward specific learning objectives (Sommer, 1977). The arrangement and use of classroom physical space is especially significant for art educators, considering the relationship between the environment and student behavior, and knowing that the setting must be able to sustain a variety of unique instructional functions. As with all work environments, the fluid use of time, proper behavior, and overall production can be difficult to implement. The art classroom, especially, should lend itself accessible for physical manipulation by teachers. How the setting is organized and managed for any given activity can heavily influence students, and, therefore, minimize the chances for confusion, distraction, and misbehavior if done thoughtfully (Susi, 1989). A way to reduce clutter and enhance mobility throughout the classroom is to provide storage units for artwork and materials. This organization minimizes student distraction and allows for better concentration (Comstock, 1995). The preparation and use of space are parts of the multifaceted, nonverbal communication system that exists in every classroom (Susi, 1986). Teachers that are considered successful by faculty and students, alike, often spend a great deal of time before the opening of school devising room layouts, arranging for the storage of

materials and supplies, and planning for the flow of student traffic during an assortment of classroom activities. For example, when students are making wood or linoleum block prints, specific work areas can be designated to accommodate the various stages and operations that are part of the printing process. These stations can be located in congruence with factors such as traffic patterns, the location of the sink, storage areas, and display space (Brophy, 1983). Because students in an art classroom are expected to solve conceptual problems, the way in which the classroom tools and materials are organized becomes a crucial source for improving student ability to turn in work on time (Pitri, 2003).

The second solution that I found while reading the literature that is related to time spent, student conduct, and work accomplished is the sound allowed in the art classroom. Art should be a subject that invokes a certain amount of freedom and creativity, but, at the same time, a teacher must always provide rules for the student environment. In the classroom setting, some students are able to screen out or ignore the ordinary classroom noise and commotion as they work. Through motivation or discipline, they are able to focus their concentration on the job they are doing, in spite of nearby confusion. There are many students, however, that do not share these attributes, and often find themselves distracted by minor noise or disorder. When these individuals have to exert their attention to coping with negative environmental conditions, they are often sidetracked from the work at hand (Susi, 1989). Conversations amongst students should be kept at a consistent level designated and disciplined by what the teacher deems appropriate so that some interaction is promoted, but, at the same time, not allowing noise to spiral into a chaotic climate. Because an art classroom should evoke an aesthetic environment to enhance the

student's creative thinking, it is often recommended that the teacher select a type of music appropriate for the lesson, and have it play in the background as the students work on their projects. Mozart's music has been proven to calm behavior and increase brain function, so it makes sense that something like traditional African music may also amplify a student's productivity (Sprague & Bryan, 2001). Overall, I find the idea of altering background sound, and observing any relevant changes in student ability to turn work in on time, interesting, and will consider this as an option for further study.

Another important solution found in the literature that can greatly affect students turning in work on time is having particular seating arrangements. Ideal seatwork provides a mixture of challenge and stimulation, while allowing for successful completion of the given project (Brophy, 1983). Asking the students directly about the physical environment, with an emphasis in the way in which desks and tables are arranged, may be the most meaningful way for students to feel a part of the classroom, as a whole (Kushins & Brisman, 2005). Even though the ultimate responsibility always lies with the teacher, and a seating chart differs from seating arrangements, students are often more dedicated and interested if they feel involved in the process (Sommer, 1977). A useful seating arrangement can provide solutions to time, behavior, and productivity issues, which can all affect students turning in their work on time. On the other hand, allowing students to sit with friends could nullify such results, making it harder for students to concentrate on their work. This is why the literature recommended that students have a say in each classroom layout, based on the current activity, and the teacher should purposefully fill desks as he or she sees fit (Susi, 1989).

Teachers are ultimately responsible for regulating the academic environment, including the material covered, approaches to learning, and the manner in which individuals communicate within the classroom (Urdan & Schoenfelder, 2006). After reviewing the literature, and three of the solutions to my problem, I am going to study organizing art materials within the classroom because the classroom is the area of study, and its organization can impact student relationships and interactions with each other, with the teacher, and with the physical space itself (Kushins & Brisman, 2005). My independent variable is the organization of art materials and my dependent variable is students turning in their work on time. By examining the physical environment of an art classroom, I hope to conclude results at the end of the action research process that will increase a student's ability to turn in work on time in my own art classroom.

Area of Focus

The purpose of this study is to describe the effects of organized art materials in an art classroom on students turning their work in on time.

Plan

Research Question

How can the organization of art materials in an art classroom affect students turning in their work on time?

Intervention

To find a solution to students not turning in their artwork on time, I will first need to purchase organization materials, such as bins, plastic containers, labels, and organizers to use when I reorganize the classroom art materials prior to observation. I will then observe students for 1 week, taking field notes and creating a student identification code so that the students' names remain confidential. I will also take photographs of the

classroom to document the current use of organization methods, and I will create a classroom map. During the following week, I will begin the journal entry process, explaining that I will ask students to write what they think about the organization of the classroom, and I will complete a student behavior and time management checklist. At the end of the week I will collect student journals and gather other data that has been completed throughout the week. I will conduct the organization process within the classroom to de-clutter and organize materials and artwork. I will organize paint by color and type on shelves and I will collect all brushes and organize them by size in plastic containers. I will collect all crayons, charcoal, markers, and colored pencils and place them in individually-labeled bins. Ceramic and printmaking materials and utensils will be given individual bins and specific areas on shelves within the room. I will label all containers, bins, and shelves, and I will organize and create a space for student artwork. During the next week, I will carry out the same journal entry process, giving students new questions that ask them to reanalyze their opinions about the organization of the classroom, and I will complete another student behavior time management checklist. I will take photographs to compare to the pictures taken before the organization process, and, at the end of the week, I will collect the journals and gather new data, and study and interpret the data to conclude my results.

Data Collection and Results

Data Collection

Methodology

Qualitative data collection techniques will be used as the primary research methods for this study. By using three data collection strategies, “experiencing”,

"enquiring," and "examining," the data collected and analyzed will be valid and useful for art teachers by instructing them on how to organize art materials in their classroom. The following sources will be included in the data collection process that will occur during a 3-week period.

Data Sources

1. *Student Journal Entries* - Every day for 2 weeks, students will be given a journal entry question that stimulates their thinking about how the classroom art materials are organized and how this affects their ability to complete work. (See Appendix A.)
2. *Artifacts* - Artifacts will be collected and will include several different sources. Multiple photographs will be taken and a classroom map will be made before and after the reorganizing of the art materials in the classroom.
3. *Field Notes* - The teacher will take field notes while observing students during the first week of the data collection process. The teacher will take notes on the effect of the organization of art materials in the classroom on student behavior and time management skills.
4. *Student Behavior and Time Management Checklist* - The observer will complete a behavior and time management checklist to determine the way the students use their time during in-class work time before and after reorganizing the classroom.

Resources

The resources needed to implement my action research include:

1. An art classroom.
2. Approximately 25 high school students eligible to participate.

3. Furnishings, which include desks/tables and chairs, etc.
4. Money to purchase organizers, bins, containers, labels, sharpie marker, copier paper,

dry-erase markers, overhead projector pens, approximately 25 small notebooks for students' journals, ink for a printer, film developed.

5. Computer to type material.
6. Printer to print the checklists and labels.
7. Copier to make copies of all data collection sheets.
8. Clock.
9. Camera.

Location

During the implementation of my action research I will be student teaching for The University of Tennessee at Chattanooga in the high school art classroom of a Hamilton County school that is one of 100 schools in the United States that follows the Paideia Philosophy. This philosophy focuses on a unique approach to active learning while teaching students how to think. Three steps that are included in the school's Paideia philosophy are "didactic," "coaching," and "seminar" styles of learning. "Didactic" teaching takes place in an in-depth learning environment that is similar to college lecturing. "Coaching" takes place when the teacher interacts with the students on a one-on-one basis. School-wide "seminar" learning takes place once a week when students interact with peers and discuss, in-depth, topics of critical readings.

Results

The following results are in relation to the organization of art materials in an art classroom and how this affects students turning in their work on time. These results are based on the data collected from student journals, artifacts, student behavior time management checklists, observation, and field notes. Once I was able to view the art classroom in which I would be conducting this action research project, I was shocked to learn that, even though the art room was cluttered and "junky," as one student said in a journal entry response, this did not mean that the art materials themselves were unorganized. The room in which I conducted this project needed some organizational help, but, for the most part, the teacher already had an organizational system in place for the majority of the art materials. All I needed to do was refine this organizational system using my plan.

After being approved to complete the study, I immediately began conducting my research plan. I began the journal entry process that same day, and, after reviewing the students' answers, I began to see that they were not distracted by the chaotic and cluttered classroom while working, but they mostly agreed that the art materials needed to be more organized to help them get their work done on time. In response to my first journal entry prompt, with regard to describing the art classroom, a student wrote, "This art classroom is dirty, that's the first thing that comes to mind. I mean…there is junk everywhere." This is an example of what students thought about the overall look and organization of the art classroom.

In the pictures located in Appendix B, Part I, the lack of organization of the classroom and the art materials is obvious to the viewer. However, with regard to

questions 2 and 3, concerning time limits during class and students turning in their work on time, one student answered in her student journal by stating,

> I do believe that we should be given more time in class to work on in-class assignments because sometimes the small time allotted isn't enough. When I am painting or drawing I feel rushed when I am in a time limit and this makes my work sloppy. If I had more time, then my work would be neater and have more detail and technique put in. I would also be happier with my work afterwards. I do believe that the organization of art materials effects how I work because when everything is organized you know exactly where to go to gather your supplies and you get started faster. If you had to search then that would take up valuable time. This also effects turning in work on time because the faster you are ready to work the sooner you will begin and have more time.

After reviewing all students' answers to these questions, this student's response seemed to be an answer that represented most of the other answers. Eighty-four percent of the students in the class answered yes to question 2, "Do you think you need more time to complete work during class?," and 60% of students answered yes to question 3, "Are you easily distracted during in-class work time?" In response to question 4, 73% of the students believed that the organization of the art classroom and materials affected their concentration during class. These results are proof that the organization of art materials within the classroom had a strong influence on students and their ability to work diligently and turn in their work on time.

Before I conducted the reorganization of the art materials within the art classroom, I observed the students and completed a student behavior checklist and time management

checklist to see how many students were distracted during class. After completing and analyzing the results, every student was, in some way, distracted during class, which inevitably affects their ability to work effectively and turn in their work on time. Once I completed the first stage of the process, I began to conduct my organizational techniques used for this action research plan, which included buying new clear plastic containers and labels for all art materials. After organizing the art materials in this way, I completed another checklist and concluded that the classroom was more structured and the students were able to find the art materials faster, which saved them time during class. Students began to notice the way in which I had reorganized the art materials and they began to see in what ways they could help keep the room and its art materials organized. (See Appendix C and Appendix D.)

Conclusions and Recommendations

To conclude my action research project, I have learned that the majority of students are greatly distracted by their surroundings during class. Whether the surroundings include students talking, an odd color of paint on the walls, or a poorly placed row of desks, many things can distract students from finishing their work on time. Most schools have requirements for wall color and restrictions on wall decorations, but an easy way to limit students from being distracted is to keep a clean and organized classroom. For an art classroom especially, this means keeping all art materials organized and in an easily accessible location. Students need structure and organization to be able to fully focus on assignments during class, and organizing art tools and materials in clear bins and labeling these bins appropriately can save students time and energy.

Teachers should be aware of how the structure of their classroom affects their students. Art teachers need to be aware of setting feasible time limits on assignments and giving students enough time to finish their work. Using seating charts and organizing the desks differently each day, depending on the assignment, may help limit student distractions and draw students into each daily lesson.

After implementing my action research process and analyzing the results, I realized that my topic of study should have been modified to retrieve better results. I assumed, prior to implementation, that all art materials in every art classroom would be unorganized. However, I have learned that this statement is untrue. My experience during this action research process has taught me to not assume anything. Once I received my first student teaching placement, I should have observed and studied the classroom before assuming that this classroom's art materials would be completely chaotic and unorganized. Even though the art materials lacked some organization, they were, by far, the most organized art materials I have ever been in contact with in my past experience. The teacher had already placed art materials in separate boxes, and had numbered each utensil and tool to keep students assigned to a specific number, in case a tool is lost.

I believe one main reason the teacher was more organized than I expected was because of her many years of experience and knowledge about how to balance an art classroom with organization and structure. A recommendation to her, and a suggestion for me, in the future would be to give more time on art assignments during class so that students are more likely to turn in their work on time. Another suggestion would be to keep organized art materials labeled in separate containers in a consistent location within the room. Keeping materials labeled in separate containers in a standard location

decreases the chance of students getting confused on where to find the materials. This consistency and organization will, inevitably, increase students turning in their work on time during class.

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Appendix A

Journal Entry Prompts

1. Describe the organization of this art classroom.
2. Do you think you need more time to complete work during class?
3. Are you able to easily focus and concentrate on your work during in-class work time?
4. Do you think the organization of the art classroom effects your concentration and ability to focus during class?
5. What is one way you would solve the problem of the lack of organization within your art classroom to limit distraction and improve your ability to finish work on time?
6. Give one example of something in the classroom that demonstrates organization and explain why you think it is a good example.
7. What is one realistic thing you can do to help the organization of the art materials in the classroom?
8. What is one thing you can do to help organize your personal belongings?
9. In general, do you think all art classrooms should maintain organization throughout the entire year to improve a student's ability to complete work on time?

Appendix B, Part 1 (Before)

Appendix B, Part *2* (After)

Appendix C (Before)

Student Behavior Checklist

Student ID #	Does not listen to teacher	Continuously talks to peers	Does not start working on time	Easily Distracted	Cannot remember assignment	Leaves work area messy
1		●	●	●		
2			●	●		
3	●				●	●
4						
5						
6						
7						
8		●	●	●		
9	●	●	●	●	●	●
10		●		●		
11		●	●	●		
12				●		
13						
14						
15						
16						
17					●	
18		●	●	●		
19						
20						
21						
22		●	●	●		
23		●	●	●		
24					●	
25						

Student Behavior Checklist cont.

Student ID #	Does not complete assignment on time	Procrastinates completing work	Raises head 5+ times	Cannot find materials in room	Walks aimlessly around classroom	Gets out of desk 3+ times to get material
1		●	●	●		
2			●	●		
3	●				●	●
4	—	—	—	—	—	—
5						
6	—	—	—	—	—	—
7	—	—	—	—	—	—
8		●	●	●		
9	●	●	●	●	●	●
10		●		●		
11		●	●	●		
12				●		
13						
14						
15						
16						
17					●	
18		●	●	●		
19						
20	—	—	—	—	—	—
21						
22		●	●	●		
23		●	●	●		
24					●	
25						

Appendix D (After)

Student Behavior Checklist

Student ID #	Does not listen to teacher	Continuously talks to peers	Does not start working on time	Easily Distracted	Cannot remember assignment	Leaves work area messy
1				●		
2						
3	●					
4						
5						
6						
7						
8		●				
9		●	●	●	●	●
10				●		
11		●		●		
12						
13						
14						
15						
16						
17					●	
18						
19						
20						
21						
22		●	●	●		
23				●		
24						
25				●		

Student Behavior Checklist cont.

Student ID #	Does not complete assignment on time	Procrastinates completing work	Raises head 5+ times	Cannot find materials in room	Walks aimlessly around classroom	Gets out of desk 3+ times to get material
1			●			
2						
3						
4						
5						
6						
7						
8						●
9	●	●	●		●	●
10		●				
11		●	●			
12						
13						
14						
15	●					
16						
17						
18						
19						
20						
21						
22				●	●	
23		●	●	●		
24	●					
25			●			

Visual Literacy in Art and Reading:

Is There a Connection Between Visual Arts and Literacy?

Kelly R. Hughes

Education 590, Fall 2007

The University of Tennessee at Chattanooga

The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149) has approved this research project 08-062.

Introduction to the Problem

Is there a connection between visual arts and literacy? If so, what is the effect of incorporating the visual arts when teaching literacy to children?

I am a visual arts teacher and I want to investigate if there is a connection between the way children interpret visual images and the way children read. From the beginning of humanity, our species has relied on visual imagery to communicate ideas and interpret the world. The prehistoric cave paintings recorded history by imagery, and, in ancient civilizations, symbols described words. Do children look at illustrations in picture books to find clues before reading the text? Do children visually decode meaning through pictures they see or produce? The answers to these questions are, easily, "yes." How does this facilitate or improve reading skills? I would like to share my knowledge of what I have learned by reading articles and journals on visual arts and literacy, and attending a literacy class about the effect of incorporating the visual arts in literacy.

Literacy is the ability to read and write, but it is also the ability to interpret information other than words, such as images and symbols. Images are all around us in our society and culture, represented in newspapers, in magazines, on television, and on the Internet. Therefore, to interpret and appreciate these multimedia images and their differences, children must develop the vital skill of visual literacy.

Visual literacy is the ability to understand images and the connection between images and language. Visual literacy includes much more than the traditional art forms, such as advertising, movies, product design, and popular culture. Visual literacy requires the development of visual arts skills and knowledge, such as the familiarity and understanding of visual elements and principles of art and design.

How do children read images? In literacy, reading is decoding words and sentences, and comprehending them to give meaning and substance to written language. Visual literacy is the identification of the subject or elements in a medium of art. The literacy of the visual arts is the elements and principles of art and design. The elements of art are line, color, texture, shape, space, value, and form. The principles of design are balance, contrast, rhythm/pattern, movement, proportion, emphasis, and unity. The elements are what a person uses to make the art; the principles are how the artwork is put together. Therefore, the elements are what the artist uses, and the principles are how the artist uses the elements. Children use cognitive skills to identify and interpret visual images. They observe and understand basic visual representations and comprehend the relationship between diverse visual representations. As a result, children can make an association of visual images to language, or words to pictures.

The visual arts are a symbolic form of language. The visual arts use the elements and principles of art and design as the foundation for exploring visual concepts and processes. “Visual arts” is a term used to describe many different types of art ranging from drawing, painting, printmaking, graphics, and product design to sculpture, architecture, and jewelry. Multimedia technology has created a new place for the visual arts.

Learning to perceive the elements of art with greater clarity will help develop children’s visual acuity, allowing them to successfully comprehend, decode, and negotiate the visual world in which we live. Understanding and applying the principles of design enhance children’s planning and organizational abilities.

Visual arts literacy is the comprehension and interpretation of visual images in the arts. Visual arts literacy helps children communicate, explore, and understand the world around them. It allows children to gain confidence in language skills by thinking with creativity and imagination.

What is the most effective literacy curriculum for our children? Teaching children to read involves an on-going cycle of phonetics, known as phonics, and whole language. The phonics approach is the teaching of letter-sound correspondences. The whole language approach teaches children to learn to recognize an infinite number of whole words, and books are used instead of textbooks. It also brought spelling into the literacy program. Today, the teaching of literacy is embarking on the teaching of balanced reading and writing learning (balanced literacy). Balanced literacy includes the use of graphophonemics (phonics), syntax, and semantics to help the children develop their full literacy language skills. This is described as follows:

1. Semantic: The meaning of the word; a child has the ability to apply background knowledge to the words.
2. Graphophonemics (phonics): The letter-sound relationship of the word; a child has the ability to decode the words.
3. Syntax: The word order (concept of the word); a child has the ability to identify the words.

(K. Cowan, personal communication, notes from emergent literacy class)

Can the visual arts promote literacy skills in children as with traditional literacy programs? Research shows the visual arts are an important way to promote literacy and brain development in children.

Review of Literature

What do the visual arts have to do with literacy and learning? Galda contends that children today are immersed in a visual culture of television, videos, and computers. They are constantly using and interpreting visual images, but they often are unable to analyze and think critically about these images. Children need the ability to see in the fullest sense and to recognize the significance of what they are seeing. When children become visually literate, they will be able to communicate effectively through both comprehending and creating images in a variety of visual media (Galda, 1993).

Ohler submits that the visual arts can motivate, excite, and engage young children to want to learn, and promotes self-esteem and expression. Combining literacy and art activities allows young children to expand their vocabulary words, and lets them express their ideas and feelings visually, enhancing imagination and daily opportunities for aesthetic expression (Ohler, 2001). The visual arts influence the development of young children's written literacy, and encourage and support the development of their written and verbal connection (Piro, 2002). Integrating reading and writing with the visual arts enhances learning, lifetime approval, and a greater understanding of everyday life experiences. Seeing connections, identifying patterns and building meaning through observation, and identifying symbols and problem solving solutions can be achieved through the arts as with the reading and writing connection (Richardson, Sacks, & Ayers, 2003).

The use of technology has expanded for the visual arts and literacy. Ohler explains that the Internet is not just a revolution in media and information delivery; it is also a revolution in visual literacy. Technology has evolved rapidly with the multimedia

environment of the World Wide Web. Much of what we experience through our computers requires us to think and communicate as designers and artists. As the word processor has provided opportunity for the writer, multimedia technology has provided opportunity for the artist (Ohler, 2001). Therefore, for children to become literate in the postmodern world, it must include an appreciation of an understanding for multimedia visual arts through technology.

Is there a way of incorporating visual arts in an emergent literacy program? Trying to find the right method of incorporating visual arts in an emergent literacy program is not easy. Through articles about literacy and the visual arts, information has been compiled based on what could be used in an emergent literacy program to improve reading skills.

Picture books are abundant during the years of emergent literacy. Piro explains that, because of children's early response to picture books as a first reading experience, children do not think only about the written language but in response to visual image, as well (Piro, 2002).

What is a picture book? Picture books reveal much of the story through the illustrations. The illustrations are accurate and coordinated with any text, but they broaden the text, giving children information or interpreting the text in a way that would not be possible from the words alone (Galda, 1993). Not all picture books have a storyline such as the alphabet, counting, and concept books. Wordless picture books do not have text but usually do tell a story. Galda states, while most schools focus on reading and writing with text, picture books remind us that art is another way to communicate and learn about the world.

"Picture books offer a unique opportunity for children to develop visual literacy because they are able to return to the visual images in books to explore, reflect, and critique those images. As children explore illustrations and develop the ability to read images, they will attain deeper meanings from literature and an awareness of how visual images are used in their own meaning making" (Galda, 1993, p. 506).

The picture walk strategy is the most basic level in reading a picture book to children. Before reading aloud, picture walk will encourage children to anticipate what might happen in the story through showing the illustrations first before reading the associated words.

In reality, illustrations are as important as, or more important than, the text in conveying a message. Studies conducted by Richards and Anderson showed that children did not automatically focus their attention on delicate aspects of illustration in different art media that are important to understanding and appreciating a story, especially when the visual theme depicts the fanciful. In order for emergent readers to appreciate the importance of the illustrations, Richards and Anderson developed the STW strategy: What do I see, what do I think and what do I wonder? This strategy helps children focus on illustrations and enables them to experience picture books fully. The STW strategy helps with readers to think carefully about the character, facial expressions, and the setting. Therefore, the emergent reader is able to take full advantage of the messages conveyed in illustrations. Once emergent readers are familiar with the STW, the exploration of different ideas is introduced in the strategy, such as the visual arts (Richards & Anderson, 2003).

Cowan used the five W's strategy of who, what, when, where and why. Once her students thought of the print-based story in the terms of the five W's, she began building on this understanding to develop the telling of a story using an art print. Cowan would then incorporate visual art lessons that incorporated the importance of relating the comprehension strategy to visual ways of knowing. Her research about the arts and literacy indicated that interpreting the pictures in books helped children read the written words. Their drawings helped them find words to tell their stories when they were verbalizing or writing. The arts also helped them to develop plot, to sequence, and to energize their writing. She also noticed that children used the visual literacy skills they learned in art lessons, such as the use of elements and principles of art and design, to help them understand the written text, as well as express themselves in written form (Cowan, 2001, p. 17).

Richardson, Sacks, and Ayers stated that the Directed Reading, Writing and Art Activity (DRWAA) strategy helps reinforce communication and self-expression, which are two goals that are common to art, reading, and writing. DRWAA is a multi-sensory strategy through which the learning process can progress from picture books to the works of artists such as Picasso and Van Gogh (Richardson, Sacks, & Ayers, 2003).

Olshansky developed picturing writing and image-making to support the literacy learning of children with diverse learning styles. She states that nurturing literacy through art (picturing writing) and image-making within the writing process (image-making) helps educators understand the significant role that art can play in literacy learning. A recent study of approximately 500 students documents that, following a full year of

picturing writing and image-making, the writing scores of at-risk students not only noticeably improved, but also kept pace with their classmates (Olshansky, 2003).

Research by daSilva revealed that, when drawing is part of the writing and reading process, it helps give ideas for writing, and teach skills of observation, skills that encourage reading the word and reading the image (daSilva, 2001).

What is the effect of incorporating the visual arts when teaching literacy to children? None of these findings showed that incorporating the visual arts in a literacy program were harmful for literacy skills. However, the findings do encourage and support the idea of having the visual arts in literacy programs. One article stated that writing skills of at-risk children were improved by using the image-making strategy for a full year.

Data Collection and Results

Methodology

I will be focusing on eight students in a seventh-grade reading group at a middle school in Cleveland, TN. Data collected for this study will incorporate three methods: a pre-questionnaire/interview and a post-questionnaire survey for comparison; pre- and post-tests over the elements and principles of art and design, along with an elements and principles drawing assessment packet; and through observation.

The first method is a pre-questionnaire/interview with my supervision to find out information regarding students' knowledge of the visual arts and how they interpret picture books. The questions and interviews are on an individual basis and will be anonymous. A post-questionnaire survey will be conducted without my supervision. Both pre- and post-questionnaires will reflect if students felt differently in their answers after

being exposed to the visual arts. A Likert scale will be used for most of the questions. Likert scales involve the use of a standardize set of responses that can be used to answer a variety of questions and statements. The type of Likert scale is based on a number system as followed: 1, Strongly Agree; 2, Agree; 3, Neutral (don't know); 4, Disagree and 5, Strongly Disagree. It will be used for questions 1- 10 (see Appendix A).

For the second method, students are given a pre-test before introducing them to the elements and principles of art and design to determine existing knowledge. Afterwards, students are introduced to the elements and principles of art and design using picture books, artwork, and an elements and principles of art and design work packet. A post-test will be given at the end of the study. Tests will determine student knowledge of the elements and principles of art and design before and after the introduction (see Appendices B and C). Also, an elements and principles of art and design assessment packet will determine student understanding of the elements and principles of art and design (see Appendix D).

I will incorporate observation as a third method. I will observe the students as a whole class and individually. There will be individual folders where information regarding the observation will be kept. While observing the students, I will take notes to record important information regarding student behavior. I will observe the students' artwork and writing. Students will be observed on how well they are able to interpret pictures in picture books and posters of various artworks. This will be done with the help of handouts: a visual literacy guide to viewing images, and a checklist (see Appendix E). I will compare information collected from the beginning and end of the study.

Data

The data will consist of information collected from the pre-questionnaire/interview, post-questionnaire, and pre- and post-tests of the elements and principles of art and design. Quantitative data will be taken from the Likert scale on the pre- and post-questionnaire/interview survey. A comparison will be conducted at the beginning and end of the study. Qualitative data will be collected from elements and principles of art and design assessment packets, writing assessments, and observation.

Materials

Fairytale picture books are used for reading instruction because they contain visual imagery. Also, these picture books are written on a middle-school reading level. Fairytale books, such as the following, will be included: (a) A Brothers' Grimm Tale, *The Lady and the Lion*, retold by Laurel Long and Jacqueline K. Ogburn, illustrated by Laurel Long; (b) Hans Christian Andersen, *The Nightingale*, retold by Stephen Mitchell, illustrated by Bagram Ibatoulline; and (c) *The Bee-Man of Orn*, by Frank R. Stockton, illustrated by P. J. Lynch.

Artwork by various artists will be shown to represent the visual arts. Artwork, such as the following, will be included: (a) Helen Frankenthaler, *Bay Side* (1967), acrylic on canvas; (b) Hans Hofmann, *The Golden Wall* (1961), oil on canvas; (c) Claude Monet, *Haystack at Sunset Near Giverny* (1891), oil on canvas; (d) Claude Monet, Impression: Sunrise (1872), oil on canvas; (e) Edvard Munch, *The Scream* (1893), casein on paper; (f) Emil Nolde, *Still Life, Tulips* (1930), watercolor on paper; (g) Judy Pfaff, *Voodoo* (1981), contact paper collage on mylar; (h) Pablo Picasso, *The Old Guitarist* (1903), oil on canvas; (i) Mark Rothko, *Blue, Orange, Red* (1961), oil on canvas; and (j) Vincent Van

Gogh, *The Night Café*, oil on canvas. All supplies and copies used during the study will be taken out of the regular classroom budget.

Results

What is the effect of incorporating the visual arts when teaching literacy to children? Exposure of the visual arts encourages children's literacy. The students participating in the study responded with a positive and enthusiastic attitude once they understood the visual literacy aspects of the visual arts. Through this study, students were able to build contextual understanding of what they "read in" or "read from" the visual image.

The pre-questionnaire/interview showed that students did not know the meaning of visual arts (various types of artwork). Also, students did not know the meaning of the elements and principles of art and design. The post-questionnaire showed that most students felt differently about the visual arts and liked talking about books that showed text with illustrations. Students also felt that looking, writing, and talking about illustrations/artwork improved their reading and writing skills. Student awareness of the elements and principles of art and design improved at the end of the study (see Figures 1-13).

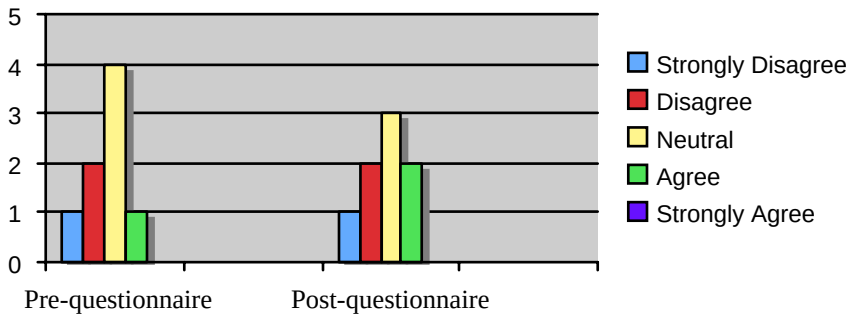

Figure 1. Results of question #1: Do you like to read?

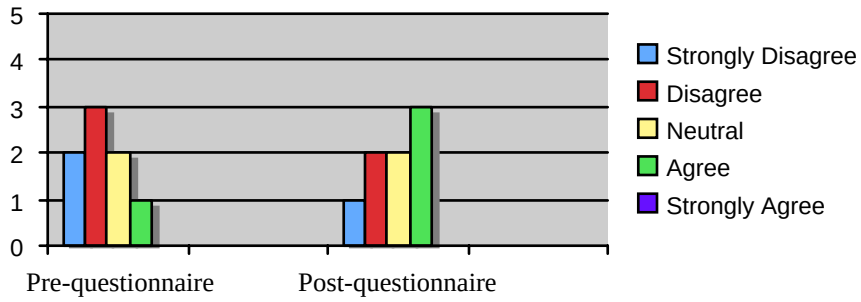

Figure 2. Results of question #2: Do you like to write?

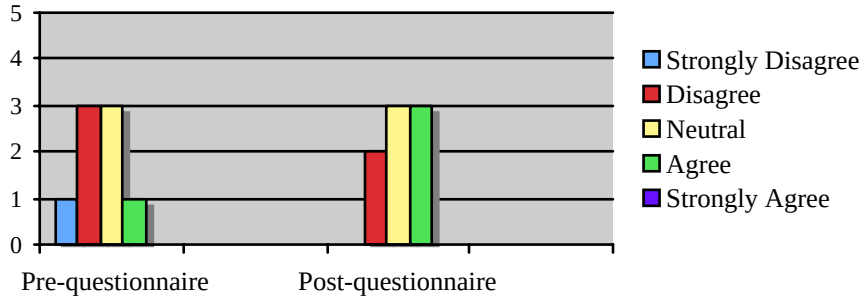

Figure 3. Results of question #3: Do you like picture books?

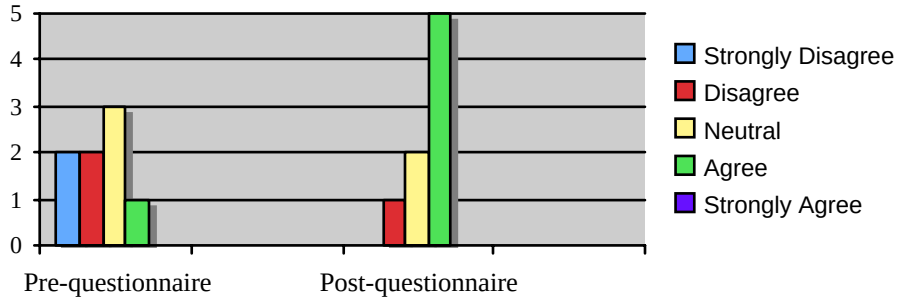

Figure 4. Results of question #4: Do you think you learned your ABC's with a picture book?

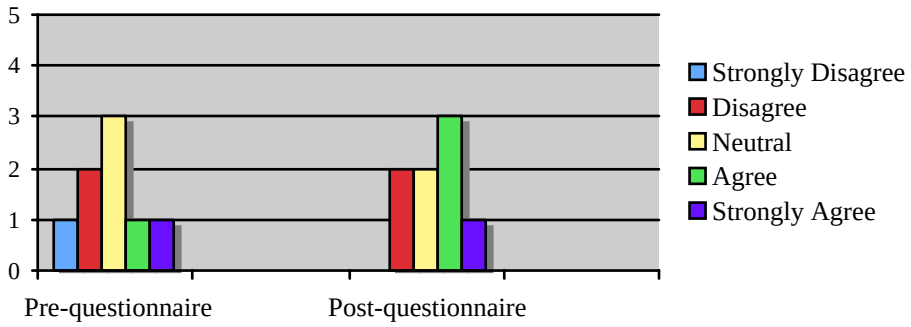

Figure 5. Results of question #5: Do you like looking at the pictures/illustrations in books before reading the text?

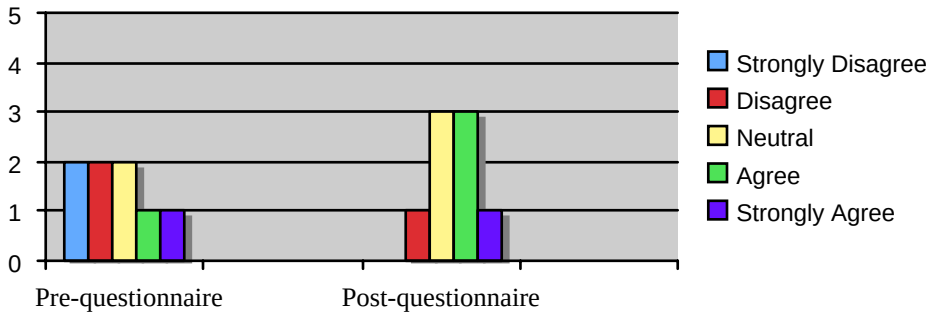

Figure 6. Results of question #6: Do you like to talk about pictures/illustrations in books?

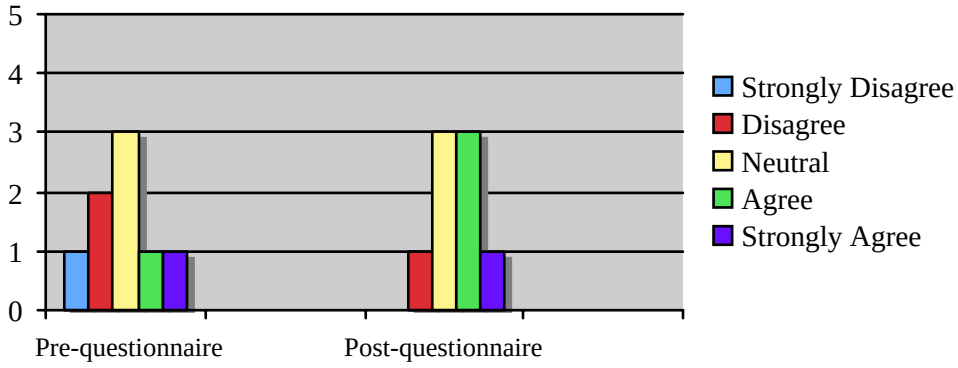

Figure 7. Results of question #7: Do you like visual art?

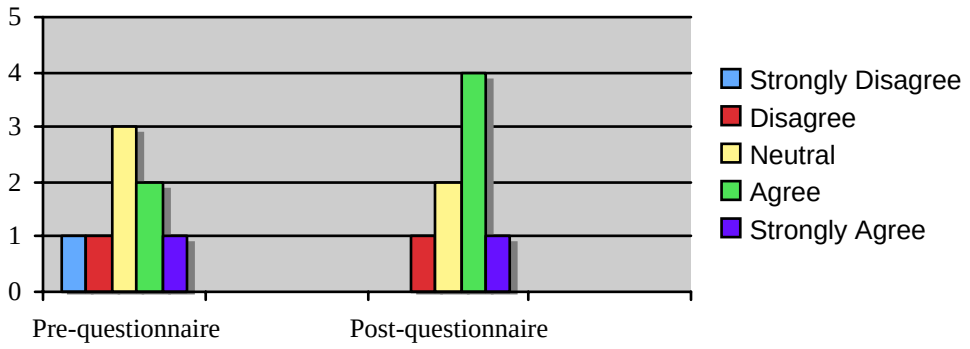

Figure 8. Results of question #8: Do you like reading about visual art and artists?

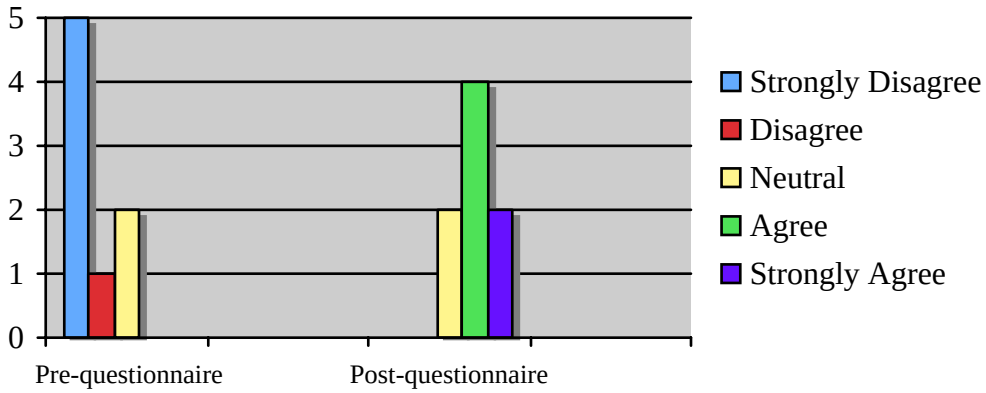

Figure 9. Results of question #9: Do you know your elements and principles of art and design?

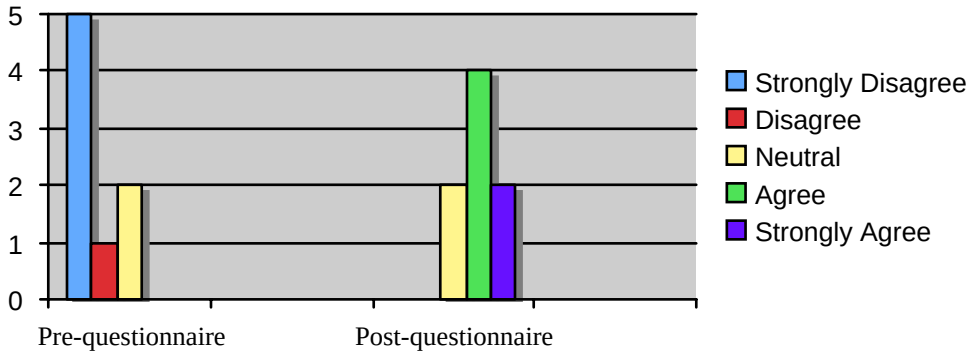

Figure 10. Results of question #10: Do you think looking, writing, and talking about illustrations/artwork can improve your reading and writing skills?

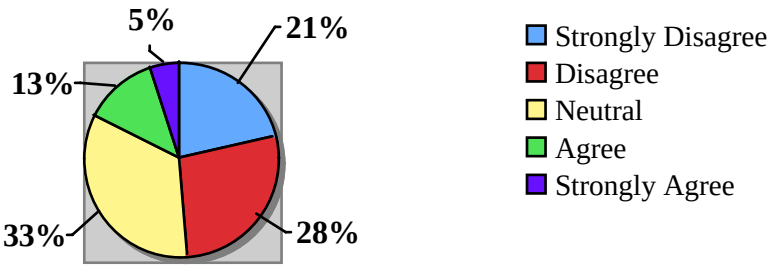

Figure 11. Overall percentage of the pre-questionnaire/interview.

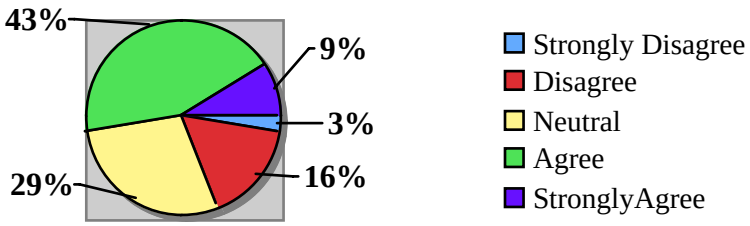

Figure 12. Overall percentage of the post-questionnaire survey.

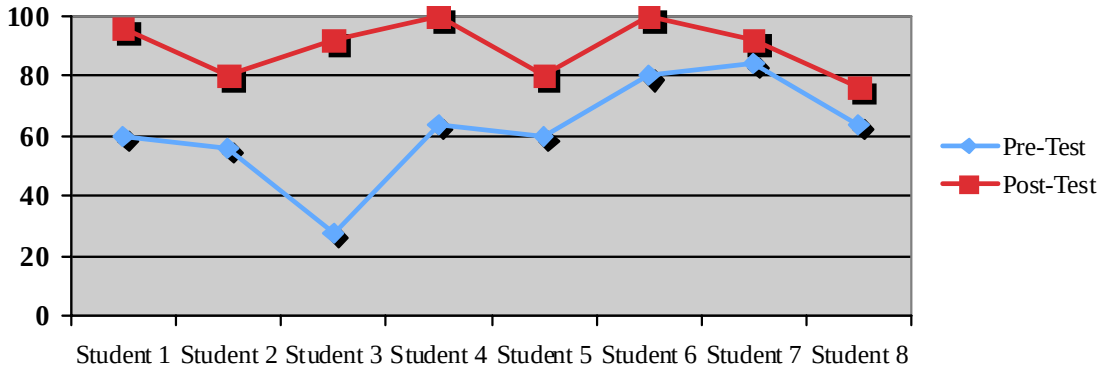

Figure 13. Student awareness of the elements and principles of art and design.

The elements and principles of art and design assessment packet showed that students understood the elements are what a person uses to make art and the principles are how the artwork is put together.

Observation is essential to scientific inquiry. Through observation, I noticed the students enjoyed articulating artwork and illustrations toward the end of the study. Before the study, students were apprehensive, but, as they felt comfortable with speaking and writing about artwork, they wanted to read, discuss, and draw what they visually interpreted. The elements and principles of art and design packet helped students fully understand how artists put together a piece of artwork. Also, students explored narrative art, learning how visual artists communicate stories through visual literacy. Students were able to make sense of what they were visually interpreting.

Through visual literacy, students reinforce skills in constructing meaning through the spectrum of literacy (reading, writing, listening, speaking, and viewing). Students can use works of art or illustrations from picture books in mastering literacy skills.

We are surrounded by images, and the capability to interpret them meaningfully is a vital skill for students to learn. Visual literacy skills require critical thinking and are essential to student success in any content area in which information is conveyed through a visual format. Visual literacy helps students make sense of the barrage of images they may face in texts and on the Web.

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Appendix A

Questionnaire/Interview (Pre and Post)

1. Do you like to read?

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

2. Do you like to write?

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

3. Do you like picture books (books that have pictures/illustration along with text, words)?

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

4. Do you think you learned your ABC's with a picture book?

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

5. Do you like looking at the pictures/illustrations in books before reading the text (words)?

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

6. Do you like to talk about pictures/illustrations in books?

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

7. Do you like visual art?

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

8. Do you like reading about visual art and artist?

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

9. Do you know your elements and principles of art and design?

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

10. Do you think looking, writing and talking about illustrations/artwork can improve your reading and writing skills?

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

11. Do you like the visual arts?

12. What type of visual art do you like?

13. What type of genre do you like to read?

14. Do you have a large collection of books, including picture books and etc. at home?

Appendix B

Elements and Principles of Art and Design Pre-test Assessment

MATCHING: Elements and Principles of Art and Design

Select the BEST word from Column II to go with Definition in Column I.

	Column I	Column II
_____	1. A large difference between two things: for example, rough and smooth or white and black.	A. Rhythm B. Contrast
_____	2. A way of combining visual elements to produce a sense of action – or implied motion.	C. Movement D. Value
_____	3. A visual tempo or beat – often described as alternating, regular, flowing, progressive or jazzy.	E. Line
_____	4. An element of art that refers to the lightness or darkness of a color.	
_____	5. A mark with length and direction, created by a point that moves across a surface.	

_____ _____

_____	6. The empty or open area between, around, above, below, and within objects.	A. Balance B. Form
_____	7. A feeling that all of the parts are working together as a team – the quality of wholeness.	C. Unity D. Emphasis

_____ 8. Area in a work of art that catches and holds the viewer's attention.

_____ 9. Principle of design referring to the way the elements are arranged to create a feeling of stability in a work – parts of equal visual weight.

_____ 10. Any three dimensional object that can be measured by height, width and depth.

E. Space

_____ _____

_____ 11. The element of art that refers to the surface quality or feel of an object – its smoothness, roughness, softness, etc.

12. Element of art produced when a wavelength of light

_____ strikes an object and reflects back to the eyes.

13. A flat figure created when actual or implied lines surround

_____ a space – can be geometric or organic.

14. Another name for related colors – have one color in

_____ common. Colors that appear next to each other on the color wheel.

15. Colors that are directly opposite on the color wheel.

A. Color

B. Texture

C. Complementary

D. Analogous

E. Shape

_____ _____ _____

16. Colors made by mixing a primary with a secondary color. Also called intermediate colors.

17. The use of different lines, shapes, textures, colors and other elements of design to create interest in a work of art.

18. The relation of one object to another in size, amount, number or degree – scale.

19. Made of only a single color or hue and its tints and shades (values).

20. Three colors evenly spaced on the colors wheel. Example: red, yellow and blue.

A. Proportion
B. Variety
C. Monochromatic
D. Triad
E. Tertiary

_____ _____

_____

21. Common name for a color.

_

22. Black, gray, brown and white.

23. A band of colors produced when white light shines through a prism.

24. The three basic colors that cannot be made by mixing colors.

25. Orange, green and purple (or violet).

A. Primary colors
B. Secondary colors
C. Neutrals
D. Hue
E. Color spectrum

Appendix C

Elements and Principles Post-Test Assessment

Circle the correct answer.

1. A type of balance is which both sides of a composition are balanced yet different.

   A. Asymmetrical

   B. Symmetrical

   C. Equal

   D. Radial

2. Formal balance is another word for which type of balance?

   A. Asymmetrical

   B. Radial

   C. Symmetrical

   D. Geometric

3. Which of the following is another word for “center of interest”?

   A. Focal Point

   B. Emphasis

   C. Dominance

   D. All of the above

4. A plan for selecting colors for a composition is also known as a _____.

A. Color Spectrum

B. Color Wheel

C. Color Scheme

D. Color Mix

5. Secondary colors are obtained by mixing two _____ colors.

A. Neutral colors

B. Complementary colors

C. Primary colors

D. Intermediate or Tertiary colors

6. The circular chart used to remember color relationships is a _____.

A. Color Scheme

B. Color Theory

C. Color Wheel

D. Color Spectrum

7. Colors are said to be contrasting if they are _____.

A. Different in lightness and darkness

B. Light in value

C. Dark in value

D. Bright and intense

8. Using _____ can create contrast.

A. Smooth and rough textures

B. Large and small shapes

C. Plain areas against areas of patterns

D. All of the above

9. Cool colors are _____.

A. Orange, green and purple/violet

B. Yellow, blue and red

C. Blue, green and purple/violet

D. White, black and brown

10. Yellow-orange, red-orange, and yellow-green are examples of _____.

A. Intermediate or tertiary colors.

B. Secondary colors

C. Primary colors

D. Triadic colors

11. Warm colors are _____.

A. Yellow, blue and red

B. Blue, green and purple/violet

C. Red, yellow and orange

D. Orange, green and purple/violet

12. Another word for brightness of a color is _____.

A. Value

B. Intensity

C. Hue

D. Complementary

13. Another word for color is _____.

A. Complementary color

B. Hue

C. Value

D. Intermediate

14. The art element that refers to the sense of touch is _____.

A. Emphasis

B. Balance

C. Line

D. Texture

15. Visual _____ is achieved when all parts of a composition appear to have equal weight. It seems stable.

A. Unity

B. Balance

C. Pattern

D. Emphasis

16. When a piece of artwork has all parts of the design working together to create a feeling of completeness.

A. Emphasis

B. Texture

C. Unity

D. Balance

17. Another term for center of interest is _____.

A. Balance

B. Movement/Rhythm

C. Unity

D. Emphasis

18. An element that is repeated over and over in a piece of artwork is _____.

A. Shape

B. Contrast

C. Pattern

D. Emphasis

19. The lightness and darkness of a color is _____.

A. Intensity

B. Texture

C. Value

D. Shape

20. The differences in two things used in a piece of artwork.

A. Emphasis

B. Texture

C. Balance

D. Contrast/Variety

21. The relationship between the size, placement, or amount of one part and that of another part of the whole created in a piece of artwork.

A. Line

B. Form

C. Proportion

D. Unity

22. The path of a point moving through space, an element of art used to define shape, contours and outlines.

A. Space

B. Emphasis

C. Value

D. Line

23. _____ is the surface quality of an object. It also refers to the way a picture made to look rough or smooth.

A. Texture

B. Proportion

C. Value

D. Shape

24. The three-dimensionality of an object, shape is only two-dimensional.

A. Shape

B. Space

C. Form

D. Balance

25. When a line crosses itself or intercept with other lines to enclose a space it creates a _____.

A. Color

B. Line

C. Pattern

D. Shape

26. _____ describes empty or full areas, areas that are far away or nearby, and areas that are huge or small.

A. Value

B. Space

C. Balance

D. Proportion

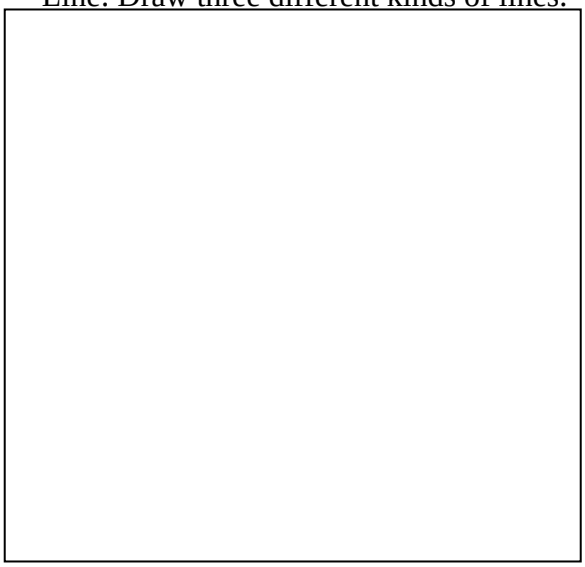
Appendix D

Elements of Art – Student Assessment

Use Color pencils and #2 pencil to demonstrate your knowledge of the Elements of Art.

Create an interesting composition in each block using the elements in bold type.

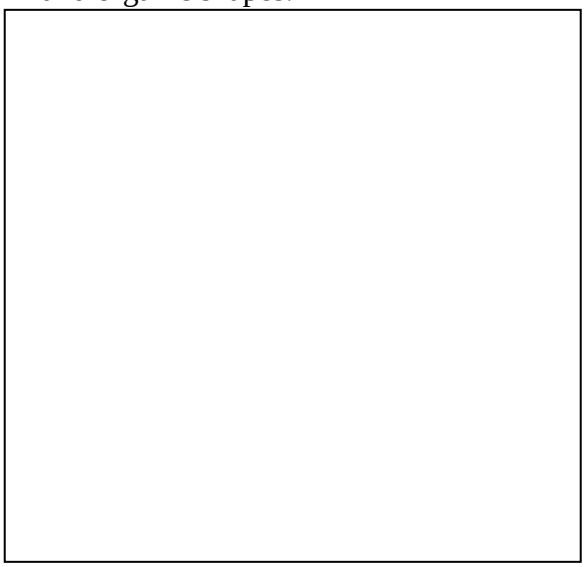
Line: Draw three different kinds of lines.



What are expressive lines?

What are constructive lines?

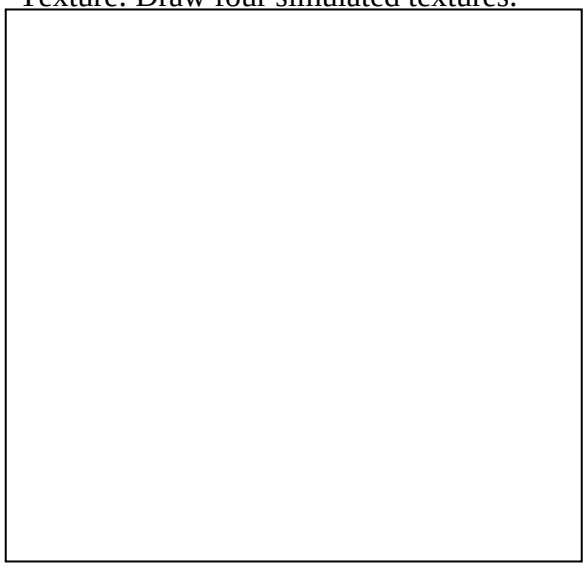
Shape: Draw and label geometric shape and organic shapes.



What are organic shapes?

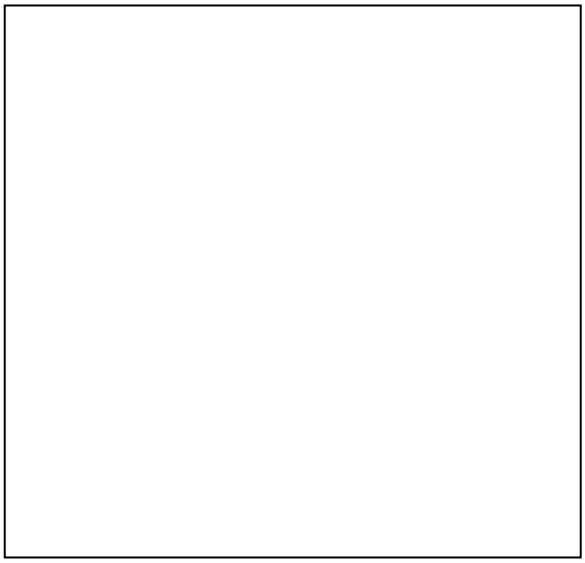
What are geometric shapes?

Texture: Draw four simulated textures.



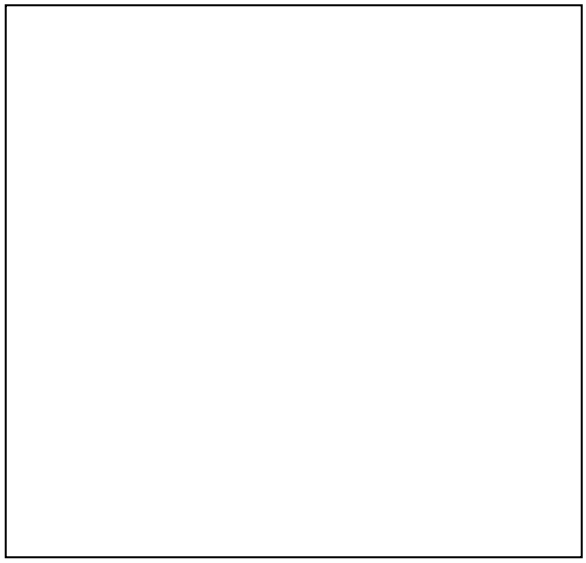
What is texture?

Value: Show a gradation of at least five.



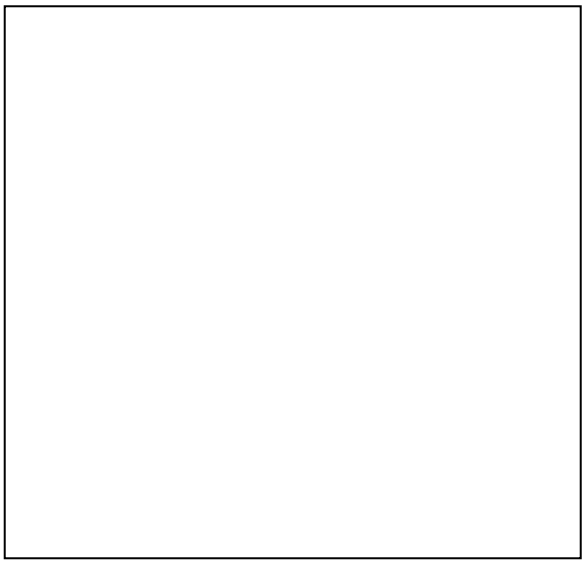
How do you get different values with your pencil?

Form: Illustrate 2 implied forms.



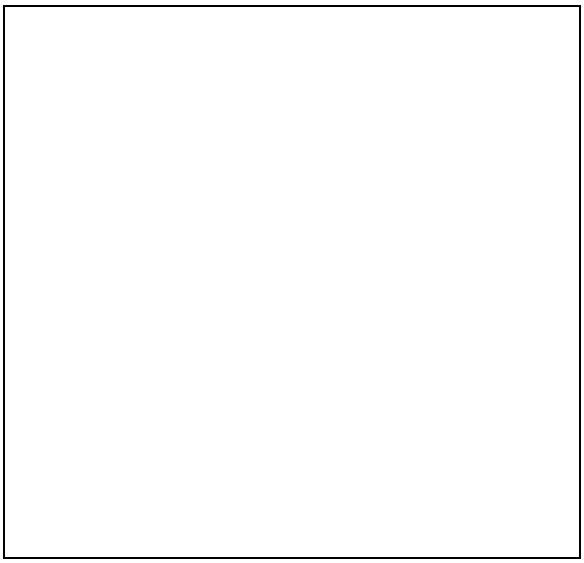
How does form differ from shape?

Space: Demonstrate your knowledge of positive and negative space.



What is positive space in your composition?

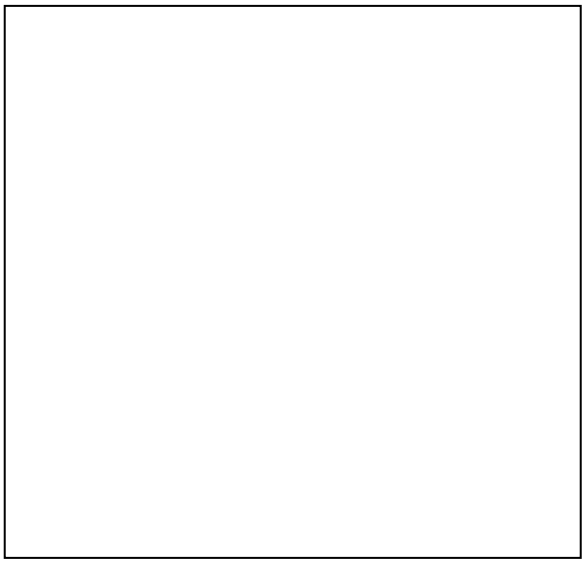
Primary Colors: Draw and color a primary triad.



Define Intermediate (tertiary) colors:

Define complementary colors:

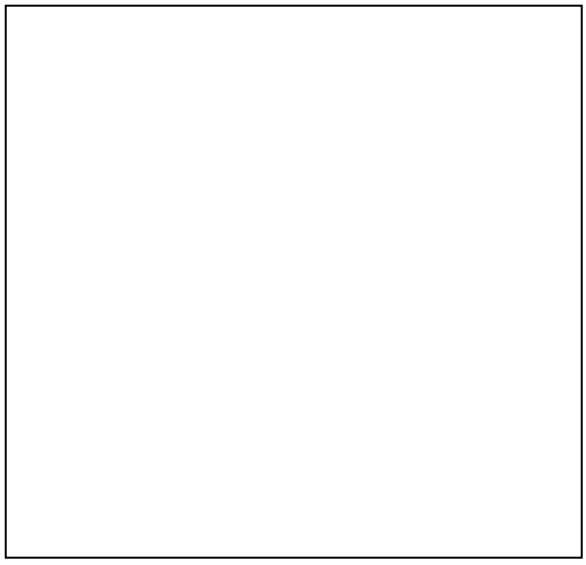
Secondary Colors: Draw and color a secondary triad.



Principle of Design – Student Assessment

Use colored pencils and #2 pencil to demonstrate your knowledge of the Principles of Design. Create an interesting composition in each block using the Principle of bold type.

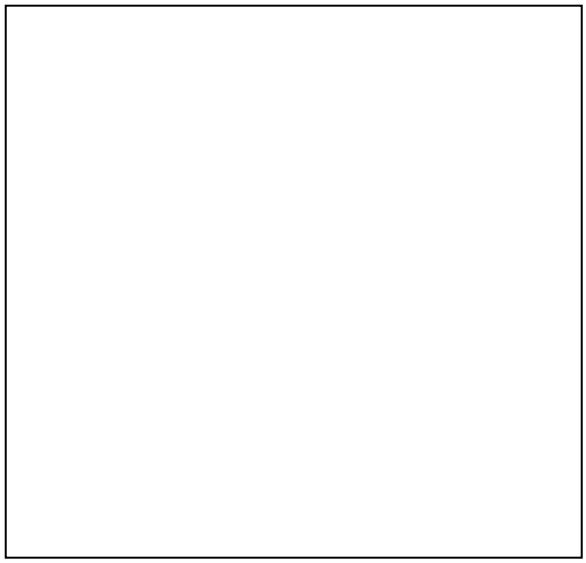
Contrast: Draw a composition that shows two different kinds of contrast.



Movement/Rhythm: Show an example of visual movement.

How do you show variety?

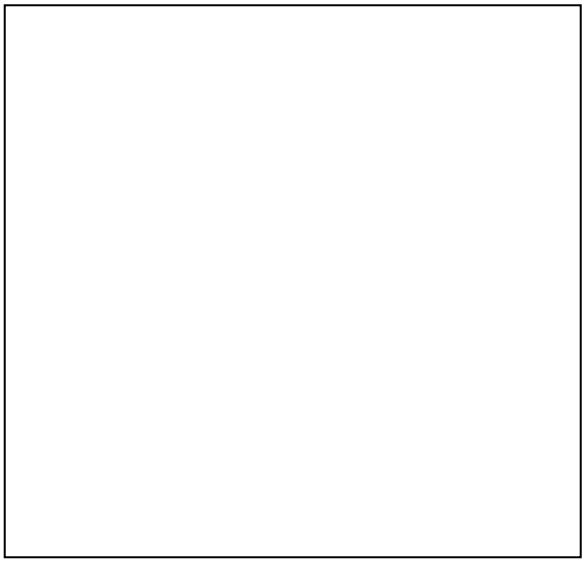
Balance: Show an example of symmetrical balance.



Emphasis: Show emphasis through the use of color.

Show an example of asymmetrical balance.

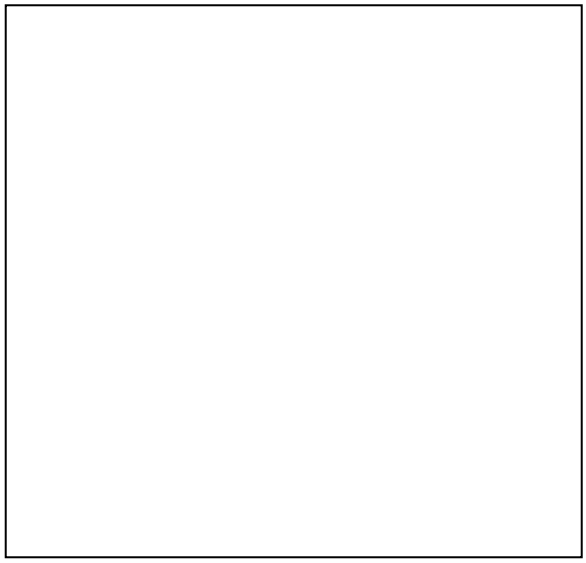
Pattern: Draw a still life showing patterns.



Proportion: Using circles show the relationship between size, and placement to create a whole.

What is unity?

Unity: show unity through the use of color and shape.

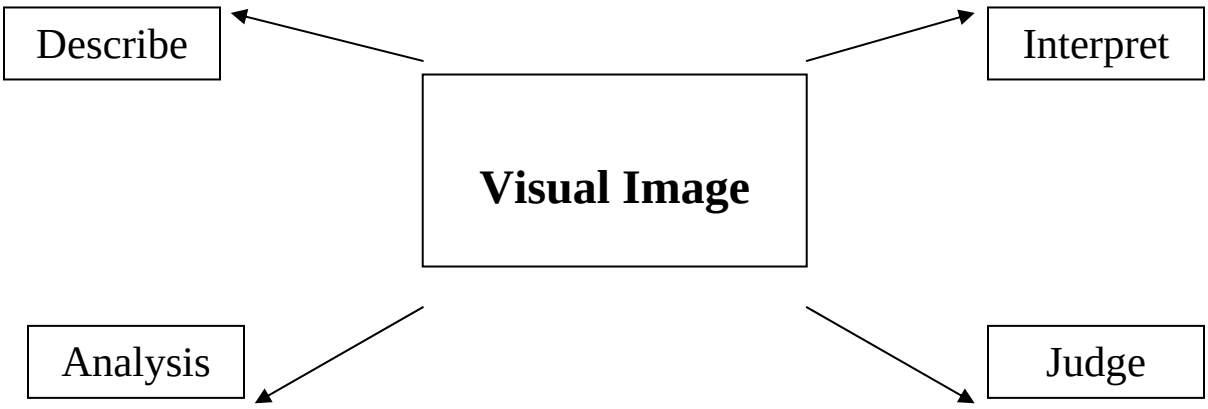


Appendix E

Handouts for Observation

VISUAL LITERACY

A Guide to Viewing Images



Step 1 *Describe*

Explain what you see. List the people, animals, and things.

Step 2 *Analysis*

How were the elements and principles of art and design used in the artwork/illustrations?
What lines, shapes, textures, space, form, value and colors do you see?
What forms and spaces (has the artist created depth) do you see?
How has the artist/illustrator used balance, movement/rhythm, pattern, proportion, contrast/variety, and emphasis to create unity?

Step 3 *Interpret*

Conclude in your own opinion describe how the artist/Illustrator shows feelings in his/her artwork/illustrations and how does it make you feel. What is happening? What is the artist telling you?

Step 4 *Judge*

What else would you like to know about the artwork/illustrations and why? What makes this artwork/illustrations special and explain? Closing statement about the artwork.

What do you SEE?
What do you THINK?
What do you WONDER?

Visual Literacy Checklist with Elements and Principles of Art and Design

PRINCIPLES

ELEMENTS

	Emphasis	Balance	Movement/ Rhythm	Pattern	Proportion	Contrast/ Variety	
Line							
Shape							
Space							
Form							
Value							
Texture							
Color							

UNITY

For each element used, make a checkmark in the box under the principle or principles the artist used to arrange the elements.

Visual Literacy checklist

Principles of Design	Written statement	Drawn an example
How has the artist established Balance?		
What is the Emphasis in this artwork? How has the artist established Emphasis?		
How has the artist established Proportion?		

What type of Pattern has

the artist create?

How has the artist

established

Rhythm/Movement?

How has the artist

established

Contrast/Variety?

How has the artist

established Unity?

Increasing the Reading Interests of Students in Urban Schools

Charlene Lewis

Education 590, Fall 2007

The University of Tennessee at Chattanooga

The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149) has approved this research project 08-054.

Introduction to the Problem

Reading skills are essential to succeed in society. Some children are exposed to reading at an early age, and, from this experience, become exceptional readers. But what about those children who are not introduced to the joy of reading at an early age? Most urban students fall under the category of not being exposed to reading early. These children usually become struggling readers who are no longer interested in the subject. Urban students are faced with other factors in their lives, hindering the curiosity to learn.

The majority of children in poverty are raised in a diminished environment. Broken homes, pregnancy, jail, drugs, and homelessness are only some of the issues children from this environment strap on their backs each morning before coming to school. The last thing they want to do is read about something they think is boring. Why would a child want to read a book about Shakespeare, or any other topic, when he is faced with homelessness, hunger, and a dysfunctional family? Some educators would say reading Shakespeare would increase the vocabulary and knowledge of a child to help them succeed in society. While the urban student is saying, “Why should I learn something I can’t even relate to” (Murphy, 2004, p. 13)?

The purpose of this study is to increase the reading interests of 9th and 10th graders in an urban school by introducing an alternative book list. A lot of urban students don’t like to read because they can’t relate to the literature or comprehend the material. An alternative book list would provide students with the choice of reading materials that were more interesting to them. If reading interests increased, so would the literacy success rate. Literacy is an important topic in the school system, and administrators are looking for creative ideas to increase reading interests (Murphy, 2004).

Variables

There are many variables that may affect the action research. One of the problems would be to convince these students that reading is fun. A lot of urban students have a negative perception of school. The reason some of them don't like school is because they are struggling readers and they read below their level (Murphy, 2004).

Another variable would be students who are good readers, but don't enjoy reading anything because it seems boring. These students would have to be offered a very eclectic book list that would challenge them and hold their attention. A third variable would be students who are still not interested in reading, even though their parents enjoy reading.

Of course, there are some more problems that may arise during the research. One of the problems would be a student writing down any type of books just to complete the survey. It would also be hard to verify that parents were answering the surveys honestly. But these are only some small stepping-stones worth accomplishing in order to increase the reading interests of urban students.

Research Questions

1. In what ways do poor reading comprehension skills influence students' reading interests in urban high schools?
2. What are the best ways to spark reading interests among students in urban high schools?
3. How does the educational background of parents influence the students' reading interest in urban high schools?

Review of Literature

How can you increase the reading interests of students if they are struggling readers? Reading comprehension skills are essential in any student's progress during the school year, and the majority of students who attend urban schools are struggling readers with low self-esteem and little interest in reading. Researchers have discovered several reasons why urban students are not interested in reading.

According to Ediger (2005), teachers should use selected procedures to assist the progress in reading. The first thing Ediger suggested was that teachers observe each student's study and reading habits at the beginning of the year. Teachers should assess the student's level so they are able to adjust their lesson plans.

Teachers need extensive training to help them identify the skills that children need help with the most. Some of the professional development for these skills could be taught in one workshop. Administrators need to put this item on the top of their list for staff training (National Association of State Boards of Education (NASBE), 2005).

According to NASBE (2005), more than two-thirds of 9^{th} to 12^{th} graders read below level and about one-quarter can't read on a basic level. This study showed that the figures were lower for African-American and Hispanic students. NASBE reported that nearly half of incoming freshmen in urban schools read 3 years below level.

NASBE (2005) noted that, on standardized tests, students are tested on how to analyze and explain content material, but these skills are not being taught in the classrooms. If teachers were trained on how to identify these skills, they might be able to implement better lesson plans.

Cziko (2005) stated that it took her years to realize why her students were not successful in reading. She admitted that most of the class didn't read the assignments at

all, but the students who read the assignment still couldn't explain the text. She realized that, in her classroom, she focused more on providing them with the meaning of the story, instead of helping them become independent readers. This is when she realized that she didn't know how to reach reading. This is why Ediger (2005) suggested teachers attend workshops, courses at universities, and departmental teacher plannings, and state and national conferences for professional development.

Some other common problems that interfere with good reading comprehension skills are bad listening habits, unnecessary disturbances from outside of the classroom, and poor conduct. All of these problems create a nonproductive learning environment (Ediger, 2005).

Teachers need to provide urban students with a reading curriculum equivalent to their reading level. Some easy ways to achieve this are by playing certain phonic or vocabulary games at the beginning of the lesson, read-aloud, strategy mini-lessons, guided practice, independent free-choice reading, and strategic and literature reading groups (Ediger, 2002; Hoffner, 2001).

Ediger (2002) suggested teachers should try to provide reading materials that are interesting to the students. Magazines, newspaper articles, comic strips, songs, and poems are only a few ways to find interesting reading topics. One way to keep the information updated is to continually assess the interests of the students.

Allender (2005) pointed out how important it is to try to connect with the students in your classroom. He observed how making this connection would open the door to help spark interests in the reading material. Allender used the subgenres of hip-hop music (gangster rap, neo-soul, old school, etc.) and connected it with some literature elements

(plot, character, theme, etc.) in a lesson. He noted that he learned a lot of important things about his students. One of the things he learned was how to respect his students' generation. Allender obtained this qualitative data by observing student behaviors and student reactions to social and economical problems in class discussions.

According to Whitney (2005), teachers should also try to connect with the students by educating themselves on the language they use. She said that, if teachers understood American Vernacular English (AAVE), they would be able to communicate with the students.

Jacobson and Thrope (2001) suggested that cross-age tutoring would also help struggling readers. She said students would improve their reading skills while tutoring younger students with their reading.

Thompson (2003) suggested that administrators strengthen relations with African-American parents because it would help students succeed in school. Parents are important in helping increase the reading interests of urban students. Most people think students in urban schools have no parental support from home, but there are some students who have good role models at home. The school should incorporate a relationship with these parents to determine ways to help increase reading interests at home. The parents in Thompson's research were very concerned with their children's success in the school systems, and they supported new ideas and suggestions from the administration.

Murphy (2004) noted students are not exposed to the importance of reading, writing, and arithmetic at home because their parents are uneducated. Most children from urban schools can't connect with certain reading materials because of the lack of exposure. She said that children from poverty are not exposed to any other lifestyles

beyond their block. This limited exposure to society would limit their language and vocabulary.

Conclusion

It's evident that there is a lot of work to be done in order to increase reading interests of urban students. Reading comprehension skills need to improve, along with an increase in language and vocabulary. Once these students begin to use good reading comprehension skills, they will enjoy the text.

An alternative book list would allow urban students the opportunity to select a book of interest to them. Urban students' reading interests would also increase if they could connect with the required reading material. These students have different social issues with which to deal, and should be assessed properly.

The goal of this research is to find the best ways to increase the reading interests of urban students so they can develop the essential skills to succeed in society.

Data Collection and Results

Methodology

This study will focus on the reading interests of 11th graders attending urban schools. During the semester, the study will be conducted with 11th graders who will be completing an independent reading assignment based on an alternative reading list. Students will be required to complete reading logs, a letter discussing the book, and homework projects. During this time, students will also complete questionnaires, informal interviews, reading logs, and pre- and post-tests to help gather important data and background information.

Most of my action research will be measured by qualitative methods. The first qualitative data collection will be to conduct informal interviews with students and parents. This data will provide background information of the home and parents. The second qualitative data collection will be to have the students complete a survey to determine what books they enjoy reading. The third qualitative data collection will be to have the students in each class complete a reading journal. This journal will have the students' comments on each book they read, and whether or not they enjoyed reading it. There will also be a teacher journal to record which reading strategies worked in the classroom to spark the reading interests. The final qualitative data collection will be through active participant observations. The quantitative research will consist of the pre- and post-survey (see Appendix A).

Results

1. What do you enjoy reading for fun?
a) magazines (12) b) newspaper (5) c) Internet (15) d) books (12) e) none (6)

2. What kind of books do you enjoy reading?
a) science-fiction (9) b) adventure (9) c) mystery/suspense (17)
d) non-fiction (9) e) none (6)

3. How many books have you read in the past six months?
a) none (5) b) 1-2 (17) c) 3-5 (18) d) 6 or more (10)

4. Name one of your favorite books?

Title:	Author:
Born Blue	Han Nolan
Tyrell	Coe Booth
The Outsiders	S. E. Hinton
Hustler's Wife	Nikki Turner
Life in Prison	Stanley "Tookie" Williams
Drama High "The Fight"	L. Divine
Kyra and Jason	Dana Davidson
Money Hungry	Sharon Flake
Where the Red Fern Grows	Wilson Rawls
Sticks and Stones	Beth Goobie

My Life is All I Have	V. Anthony Rivers
Tears of a Tiger	Sharon Draper
The Coldest Winter Ever	Sister Souljah
A Midsummer Night's Dream	William Shakespeare
Number the Stars	Lois Lowry

5. How often do you read during the week?
a) none (7) b) 30 min. (23) c) 1-2 hours (17) d) 3 or more hours (13)

Resources

- Subscription to magazines (*Ebony*, *Sports Illustrated*, *Essence*, *Vibe*, *Black Enterprise*, etc.).
- Subscription to the newspapers (*Chattanooga Times Free Press*, *USA Today*).
- Books (a couple of book club memberships).
- Access to computers.

Conclusions and Recommendations

Conclusions

It is evident that there is a lot of work to be done in order to increase reading interests of urban students. Reading comprehension skills need to improve, along with an increase in language and vocabulary. Once these students begin to use good reading comprehension skills, they will enjoy the text.

An alternative book list would allow urban students the opportunity to select a book of interest to them. Urban students' reading interests would also increase if they could connect with the required reading material. These students have different social issues to deal with, and should be assessed accordingly.

The goal of this research is to find the best ways to increase the reading interests of urban students so they can develop the essential skills to succeed in society.

Recommendations

How do we increase the reading interests in students attending urban schools? It's evident that students will read if the material is interesting and they can connect to it. As educators in society, we should make it imperative that we provide students with the opportunity to be exposed to these books. Yes, it may take more planning. In the long run, the students are learning how to enjoy reading, which will increase their academic success. I suggest that most schools start this independent reading project with students to offer them a balance of genres of books to enjoy. The process will begin slowly because some students are reluctant readers from memories of their past struggles. But it's guaranteed that, once a child selects that book with which they connect, a light bulb comes on and they are hooked on reading forever.

The results in my classrooms have been amazing. I have students who hated reading turn into avid readers. They are excited about reading and thrive to find new books and authors. So, I strongly recommend that schools adopt the independent reading project, or use of an alternative reading list, to demonstrate to our urban students that reading is not only fundamental, but it's fun.

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Appendix A

Student Questionnaire

Please circle the correct answer/fill in the blank

1. What do you enjoy reading for fun?

a) magazines b) newspaper c) Internet d) books

2. What kind of books do you enjoy reading?

a) science-fiction b) adventure c) mystery/suspense d) non-fiction

3. How many books have you read in the past six months?

a) none b) 1-2 c) 3-5 d) 6 or more

4. Name one of your favorite books?

Title:_____ Author:_____

5. How often do you read during the week?

a) none b) 30 min. c) 1-2 hours d) 3or more hours

Does Talking Affect the Quality and Speed of Drawing for Art I Students

Paige Mathis

Education 590, Fall 2007

The University of Tennessee at Chattanooga

The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149) has approved this research project 08-066.

Introduction to the Problem

As a high-school art teacher, I consider drawing to be an important skill that can greatly benefit students. Not only can students improve the quality of their artwork, but, according to Edwards (1999), in *Drawing on the Right Side of the Brain,* learning to draw can help students see things deeply and profoundly, gain confidence in their creative abilities, and ultimately learn to shift to a new mode of thinking and creative problem solving. Sperry, a Nobel Prize winner of brain research, found that the brain functions in two different modes of thinking. The left side of the brain, or L-mode, is the verbal, analytic, and sequential side of the brain. The right side, or R-mode, is the visual, perceptual side of the brain. Because our educational system is designed around verbal skills, often times, the right side of the brain is neglected. According to Edwards, "the right brain is lost in our school system and goes largely untaught" (Edwards, 1999, p. 40). Ideally, students should be using the whole brain in order to maximize their thinking skills. Since drawing is a skill that uses the right side of the brain, it makes sense that students should be taught to draw. Many students, around middle school age, stop developing their drawing skills because the L-mode of their brain is more developed and relies mainly on the use of symbols. This is why many students only draw stick figures or always draw trees the same exact way. The idea behind the book, *Drawing on the Right Side of the Brain*, is that students need to see things differently in order to improve their drawing skills. This requires a cognitive shift from L-mode thinking to R-mode thinking. Most students need to be taught how to make the shift to R-mode thinking (Taylor, 1998). In doing research about the two modes of thinking, Levy, a noted brain researcher, found that the L-mode of thinking interferes with the R-mode of thinking, preventing the

R-mode from maximum performance (Edwards, 1999). Thus, it makes sense for a teacher to set up conditions that encourage a mental shift from L-mode to R-mode. According to Edwards, “since drawing a perceived form is largely an R-mode function, it helps to reduce L-mode interference as much as possible” (Edwards, 1999, p. 46).

As an art teacher, my goal is for my students to learn about the subject of art as a whole, including the elements of art, principles of design, and art history. It is also my intent that they produce the most successful studio projects possible. In order to do this, their drawing skills need to be as advanced as possible. I am constantly looking for ways to improve the drawing skills of my students. If I set up conditions that encourage a mental shift from L-mode to R-mode thinking, the drawing exercises of my Art I students will improve in quality. Their drawing speed will also get slower as they will be more focused on seeing the subject more clearly.

Review of Literature

According to research done by Sperry, the human brain is divided into two hemispheres that each has a separate mode of thinking (Edwards, 1999). Sperry claimed that the left side is verbal, sequential, and analytic, while the right side is visual and perceptual. Drawing is a skill that would be considered a right-brain activity. According to Edwards, the way to improve the drawing skills of students involves teaching them to see the subject more clearly (1999). Training students to see details clearly enough to record them in a drawing should not only improve their drawing skills, but sharpen their perception (Unsworth, 1996). Through her own research, Edwards agrees with this idea of sharpened perception by claiming that the arts are “essential for training specific visual, perceptual ways of thinking, just as the ‘3 R’s’ are essential for training specific

verbal, numerical, analytical ways of thinking" (Edwards, 1999, p. XIII). The idea that higher order thinking occurs in the left brain has been replaced by research that says much learning is "both-brained" (Jensen, 1998). Edwards argues that both modes are necessary to extrapolate meaning, think critically, and solve problems (1999). These ideas suggest that we, as educators, should be exercising not only the left brain, but also the right brain. According to Unsworth, it is unfortunate that "many children begin school already conditioned to left-brain drawing – copying cartoons, making stick figures and lollipop trees, relying on coloring book images" (1996, p. 26). Often, by age 10, symbols and names take over the spatial perceptions of the right-brain (Edwards, 1999). Because most school systems are based on left-brain activities, students who can interpret numbers and symbols well are often very successful in school. Many middle and high school art students demonstrate this neglect of the right brain by drawing only memorized shapes, such as houses or trees, exactly like they learned to draw as a young child (Taylor 1998). Although scientists now agree that the two sides of the brain have different functions, Edwards claims that, "the two hemispheres can work together in a number of ways. Sometimes they cooperate with each half contributing its special abilities and taking on the particular part of the task that is suited to its mode of information processing. Other times, the hemispheres can work singly, with one more or less leading, the other more or less following" (1999, p. 34). For many tasks, both the L-mode and R-mode are used. Edwards claims that, of the few tasks that use only one mode, drawing an object uses the visual, R-mode, unassisted by the verbal mode. Therefore, as an educator and art teacher, it is important to understand the characteristics of right-brain activity to be able to better exercise the right side of the brain.

In order to exercise the right side of the brain, a cognitive shift must be made to the R-mode way of thinking. A cognitive shift can be defined as “a transfer from one mental state to another” (Taylor, 1998, p. 6). This shift releases you from the dominant verbal, symbolic way of seeing. Edwards indicates that this release from the L-mode way of thinking can be pleasurable, possibly due to “resting the left hemisphere, stopping its chatter, keeping it quiet for a change” (1999, p. 63). It is apparent when the shift from L-mode to R-mode has been made because there are specific characteristics associated with the R-mode way of thinking and seeing. First, time seems to be suspended when in R-mode. Many artists describe this shift as an altered state of awareness. In addition to the suspension of time, whatever is being worked on, seems more interesting and beautiful (Edwards, 1999). While in this heightened state of awareness, verbal language seemingly disappears from consciousness. R-mode ignores spoken words and concentrates solely on the R-mode task at hand. In fact, it becomes very difficult to function in the R-mode while talking. Additionally, when working in the R-mode, you tend to slow down, in order to see things more clearly (Edwards, 1999).

Learning in all subject areas will increase if the R-mode can be stimulated (Taylor, 1998). In order to stimulate this shift, certain conditions should be set up in the art room. “The key to drawing successfully, is forcing the brain to move away from symbols. The left brain wants to dominate the creative process” (Kaplan, 2007, p. 109). Therefore, the art teacher can create this atmosphere by encouraging total silence. Talking to others is “not a good situation for maintaining an R-mode, wordless state of mind” (Edwards, 1999, p. 152). Even the teacher talking could cause students to shift back into L-mode. The art teacher should give directions for the drawing exercise and

then encourage total silence from everyone. Music can also be used to silence the L-mode (Flood, n. d.). Drawing skills should improve when students are able to shift to the R-mode way of seeing their subject. This shift will happen in the art room when the teacher sets up conditions that encourage this shift. Limiting talking and providing background music will help students make this shift to the R-mode while doing drawing exercises. In turn, the strengthening of the right side of the brain will help students develop the ability to use both sides. Using both sides of the brain will then enable students to become better, overall students.

Data Collection and Results

Data Collection

Subjects

Student participants for this 3-week study include a total of 19 students who attend a private Christian school located in Chattanooga, which has approximately 200 6th- through 12th- grade students. The 19 study participants are Art 1 students. The 19 students are split into two Art I classes. The two classes meet during different periods of the day.

Methodology

The implementation of this study involved two Art I classes. The third period Art I class consists of 8, ninth-grade Art I students, while the seventh period Art I class contains 11 students that range from 9th to 12th grade. The two classes are taught the same information at the same rate. Each of these students participated in art classes during middle school. Each of these students is in their first year of art in high school. For this study, each student completed five drawing exercises. The exercises were presented

at the beginning of five class periods, spread over a 3-week period. Each exercise was introduced in the same way to both classes. For Group 1 (third period Art I), conditions were set up to encourage R-mode thinking. After introducing the planned drawing exercise to Group 1, there was no talking allowed. Soft music was played to encourage a shift from L-mode to R-mode. As the instructor, I did not speak audibly during the exercise. I fielded questions by speaking very softly to the specific student with the question. The starting time of each exercise was noted. On the Speed of Drawing Log (see Appendix A), I kept track of the number of minutes it took each student to complete each exercise.

For Group 2 (seventh period Art I), conditions were not set up to encourage a shift from L-mode to R-mode. After introducing each exercise, students were not reprimanded for talking, so tended to talk to their classmates while drawing. Music was not played during Group 2 drawing exercises. As the instructor, if a student had a question, I answered it for the whole class. At the beginning of each drawing exercise, I took note of the time. I then recorded the number of minutes it took for each student to complete each exercise. I noted this information on the Speed of Drawing Log.

Students were instructed not to write their names on the front of the drawings. At the end of the 3- week period, another art teacher from the school scored the exercises. The teacher was unaware of the artist of each drawing. She was also unaware of which class period the student had art. She rated the quality of each drawing based on scale and accuracy. She scored each drawing based on a scale of one to five, with five being the closest to looking like the intended subject in scale and accuracy. A score of one meant

the exercise had flaws in both accuracy and scale. These scores were recorded on the Quality of Drawing Log (see Appendix B).

Time Commitments

The two groups of Art I students completed five drawing exercises during the regularly scheduled Art 1 class periods. These five exercises took an average of 2 hours and 38 minutes of class time for the students to complete. There was no required time commitment outside of regularly scheduled class.

Results

The quality of the drawing exercises was scored by an objective art teacher who did not know the students. Quality was rated on a scale of 1 to 5, with 5 being the best quality and 1 being the weakest quality. When looking at the results in the quality of drawings, Group 1 had a higher average quality score for the first of the five exercises by 0.175. For the last four exercises, however, the quality of drawing scores were slightly higher for Group 2. For Exercise 2, Group 2 averaged a score of 2.545, while the average score of Group 1 was 1.875. Group 2 also scored higher on Exercise 3, with an average 0.26 higher. For Exercises 4 and 5, Group 2 scored higher, with averages 0.83 and 0.775 points higher, respectively. The biggest difference in quality was on Exercise 4, the drawing of a woman's profile, where Group 2 scored an average of 0.83 points higher than Group 1.

Exercise	Group 1 Average	Group 2 Average
#1: Horse	2.875	2.7
#2: Chair	1.875	2.545
#3:Hand	2.285	2.545
#4: Woman Profile	2	2.83
#5: Man Reading	2.125	2.9

Figure 1. Quality of drawing scores for Art I students.

The required time for each student to complete each exercise was recorded and averages are presented in *Figure* 2. Group 1 took longer to finish Exercise 2, Exercise 3, and Exercise 5. The largest margin of difference was in Exercise 5, where Group 1 took 5.6 minutes longer to re-create Vincent van Gogh's painting, *Man Reading the Bible,* 1882. Group 2, however, took longer to complete two of the five drawing exercises. For Exercise 1 and Exercise 4, Group 2 took longer, with the biggest difference occurring in Exercise 4, where Group 2 took 5.4 more minutes to complete the exercise.

Drawing Exercise	Group 1 Average	Group 2 Average
#1-Horse	**20.6**	**21.8**
#2-Chair	**23.8**	**22.5**
#3-Hand	**43.7**	**43.3**
#4-Woman Profile	**8.6**	**14**
#5-Man Reading	**44.1**	**38.5**

Figure 2. Speed of drawing in minutes for Art I students.

Conclusions and Recommendations

Conclusions

The results from this study do not show, with certainty, that talking while drawing affects the accuracy or speed of drawing. However, there were some limitations with this study that may have affected the results. First, the two groups of Art I students that participated in the study are composed differently. Group 1 was smaller (8 students), with only ninth-grade students. Group 2 had 11 students. Of the 11 students, 9 are 9th graders, 1 is an 11th grader, and 1 is a 12th grader. This is significant because, although none of the students have taken Art I before, the two older students have better drawing skills. This could be due to chance, or the maturity that comes with age and experience. Having both of these older students in one group could affect the results. Additionally, these two groups meet during different periods of the day. Group 1 meets during third period. Group 2 meets during seventh period, which is the last period of the day. This could cause a difference in students drawing skills due to their energy level being lower at the end of the day.

Recommendations

I do not think that many would argue with the value of exercising the right side of the brain. Fortunately, as an art teacher, it is easy for me to do this by teaching drawing throughout the art curriculum. Although the results of this study did not show that talking has a negative affect on the quality and speed of drawing, I think that encouraging art students to be nonverbal while creating art is positive for several reasons. First, it creates an atmosphere in the classroom that allows students to not be distracted while working. Second, it allows students to expand their own creative ideas without the verbal influence of classmates. Lastly, I do believe, if studied on a larger scale among a larger number of students in the same grade level, it would be evident that talking does affect both the

quality and speed of drawing. The importance of helping students develop the whole brain is the most important job I currently have as an art teacher. This is a job I plan to diligently continue, regardless of any verbal interference that comes my way.

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Appendix A

Speed of Drawing Log

Exercise **Group #: __**

	End time	Total Minutes	Class Average
#1 Upside down Horse Start time:			
#2 Chair Start time**:**			
#3 Hand Start time:			
#4 Woman Profile Start time:			
#5 Man Reading Start time:			

Appendix B

Quality of Drawing Log

	Group #1 Scores		Group #2 Scores	
Exercise #1-Horse		AVG.		AVG.
Exercise #2-Chair				
Exercise #3-Hand				
Exercise #4-Woman Profile				
Exercise #5-Man Reading				

Students will receive a score of 1-5 on each exercise based on the accuracy (of scale and correctness) of the drawing. Scores will be given by an objective art teacher who is unaware of the students involved.

The Impact of Rehearsing Multiplication Facts

Jackie E. Myers

Education 590, Fall 2007

The University of Tennessee at Chattanooga

The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149) has approved this research project 08-056.

Introduction to the Problem

I began teaching in 2006. Upon entering the school year, I was told that 50% of my Algebra I students would not pass. Obviously, I was not happy with that percentage. The year started out pretty well, with better than 48% of my students passing and ended with 62% passing for the year. However, my concern is not the students who passed, but the students that failed.

In today's world of technology, the need for mathematical skills and thinking has increased. Higher income and successful employment are just two of the benefits of mathematics proficiency. However, less than 31% of 4^{th} grade students in the United States scored at or above the proficiency standard on the 2003 National Assessment of Education Progress in mathematics. Likewise, over 50% of children with learning disabilities in the United States have Individualized Education Programs that address mathematics. Without direct intervention, these disabilities continue into adulthood. One goal of mathematics instruction, as listed by the National Council of Teachers of Mathematics (NCTM), is fluent computation. Fluency, better known as automaticity, requires a child to be able to automatically compute mathematical facts. Automaticity is accomplished when it is faster to recall the facts than to use a different strategy for completing the task (Burns, 2005).

Area of Focus Statement

The purpose of this study is to describe the impact of rehearsing multiplication facts on students' attitudes and achievements in Algebra I.

Statement of the Problem

The problem is that students do not have the basic math skills needed to pass Algebra I. In my experience, students do not know their multiplication facts well enough to recall them, and rely on a calculator, most of the time, to do addition, subtraction, multiplication, and division. Secondly, students do not understand the order of operations, and how to apply it effectively. Thirdly, students do not have confidence in their math skills, consequently putting them at a disadvantage in tackling Algebra I.

Research Questions

The researcher will address the problem by exploring the following question:

1. What is the effect of incremental rehearsal on the student's ability to learn multiplication facts?
2. How are the student's attitudes toward Algebra I changed after using this strategy to learn multiplication facts?

Review of Literature

Probably the most well-known and established procedure for learning multiplication facts is rote memorization. I can remember learning my multiplication tables in elementary school. It was a long process of drill and practice. Research still shows that memorization is a widely-used method for learning multiplication facts. However, the NCTM (2000) argues that "learning mathematics with understanding is essential," and that research shows "the alliance of factual knowledge, procedural proficiency, and conceptual understanding makes all three components usable in powerful ways" (p. 20). Although many children learn addition and subtraction well, multiplication is much more complex. It requires a more in-depth understanding of units and multiplicative situations. In fact, trying to multiply two numbers can be quite difficult

if a student does not have a basic understanding of addition. Consequently, the NCTM standards-based curriculum suggests sense-making activities to develop number sense, problem solving, and conceptual understanding (Smith & Smith, 2006).

How do we accomplish automaticity in multiplication facts, while, at the same time, helping students understand the overall concept of mathematics? Are these two areas separate or should they come under the same umbrella of learning mathematics? Intervention literature suggests two different approaches to achieving automaticity in math facts. The first approach is teaching facts through strategies. Research has shown that receiving instruction on just one strategy can increase a student's accuracy to 100% (Wood & Frank, 2000). Although this research was from teaching exceptional children, could it be used to teach all children? Some suggested strategies include calculating and memory-enhancing strategies. One memory-enhancing strategy is the use of fact families. All 100 basic multiplication facts are grouped into families: the zeros, ones, twos, fives, nines, and peg words. A fact is included in a family if it contains at least one numeral that corresponds to the name of that family. For example, 0 x 4 belongs in the zero family because it has at least one zero. Any number multiplied by 2 would be in the "doubles" family because it has at least one number 2. After all of the facts are grouped into families, there are at least 15 facts left which are grouped into the peg words family. These should be taught last because this strategy takes more time to learn.

Calculating strategies is another process to learn multiplication facts. It is widely assumed that students do not know their multiplication tables because they have not been made to learn them. However, it is not so simple. Recent research suggests that knowing the facts "by heart" and being able to figure them out should be two complimentary

approaches. Students should gradually learn their multiplication facts, but should also be able to work out ones they do not remember. This can be accomplished through calculating strategies. The strategies used should help students establish links and connections between results, instead of treating the multiplication facts as separate, isolated facts. If you apply a few simple strategies, you can learn nearly half the number of facts that need to be learned. For example, if you apply the commutative property to the math facts, you will see that 8 x 9 = 9 x 8. This almost immediately halves the number of facts that need to be learned. Applying the distributive property shows students how to divide numbers in a variety of ways such as:

- 2 x 37 = 2 x 30 + 2 x 7 = 60 + 14 = 74
- 2 x 37 = 2 x 40 - 2 x 3 = 80 - 6=74
- 2 x 37 = 2 x 35 + 2 x 2 = 70 + 4 = 74

These are just a few examples of calculating strategies that can be used to learn multiplication facts (French, 2005).

The second approach to learning multiplication facts is timed practice drills. Although educators and researchers assume that strategies lead to automaticity, this is not always true for students with learning disabilities. Timed practice drills are often an alternative for low-achieving students and students with learning disabilities. Positive drill benefits have led to the development of specific drill approaches. Two such examples are drill sandwich (DS) and incremental rehearsal (IR). DS involves 50% known and 50% unknown items; IR uses a gradually-increasing ratio of known to unknown items, reaching 90% to 10%. Research suggests that IR led to better retention than other drill practices (MacQuarrie, Tucker, Burns, &Hartman, 2002).

Upon completion of my research, I decided to use incremental rehearsal as my intervention for helping students achieve automaticity in multiplication facts.

Although most of the research has included students from elementary and middle school, I feel this information is pertinent to my action research. Since multiplication facts are taught in third or fourth grade, there is not much research available on teaching multiplication facts to high school students. However, the information-processing theory supports the idea that automaticity is essential in many areas of higher mathematics. Students who cannot readily retrieve information get bogged down on simple tasks, and are unable to accomplish more difficult tasks required in Algebra I and other higher mathematics (Woodward, 2006). Therefore, I hope that enabling my students to conquer these shortcomings before going in-depth into Algebra I will make them more successful in Algebra I. The concepts learned in Algebra I are needed for success in future high school mathematics. Throughout this action research process, I will implement a series of strategies to help students master their multiplication facts, and measure the effects on their success in Algebra I, and the change in students' attitude toward their ability to perform in Algebra I. I not only want to find a way for students to learn their multiplication facts, but also create automaticity in multiplication facts, as well as to foster a better understanding of the overall concepts of mathematics.

Data Collection and Results

Data collection took place in an urban, ninth-grade Algebra I classroom setting in Ooltewah, Tennessee. Participants included one ninth-grade teacher, one inclusion teacher, and 13 ninth graders.

Data collection began with a survey of the student attitude (see Appendix A) toward math, in general, and student ability to perform well in Algebra I. The results are shown in Figures 1 through 3.

Question 1: I am confident about my basic math skills.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
5	5	0	3	0

Figure 1. Question 1 from Before Survey.

Question 2: I like math and am glad to be taking Algebra I.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
5	4	3	0	1

Figure 2. Question 2 from Before Survey.

Question 3: I am confident about my ability to perform well in Algebra I.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
5	7	0	0	1

Figure 3. Question 3 from Before Survey.

The results of the survey showed that the majority of the students sampled are confident in their abilities to be successful in Algebra I. Seventy-seven percent of the students surveyed are confident about their basic math skills, 69% of the students surveyed like math, and 92% of the students surveyed are confident in their abilities to perform well in Algebra I.

The students were also given a pre-test (see Appendix C) to measure their ability to perform well on their multiplications facts. The pre-test provided a baseline of student abilities. The results from the pre-test are presented in Figure 4.

Student Number	**% Correct**	**Proficient / Non Proficient**
001	100%	proficient
002	100%	proficient
003	76%	proficient
004	90%	proficient
005	100%	proficient
006	98%	proficient
007	99%	proficient
008	100%	proficient
009	99%	proficient
010	97%	proficient
011	96%	proficient
012	99%	proficient
013	79%	proficient

Figure 4. Pre-test results. A score of 70% or greater determines proficiency.

The results of the pre-test showed there is a correlation between a student's basic math skills and attitude toward Algebra 1. With a good attitude, and a strong foundation in basic math skills, the student will demonstrate a higher level of success in the Algebra 1 classroom.

After the initial testing was done, the students were given a series of drills on multiplication facts. Between drills, the class discussed different strategies to learn their multiplication facts and rehearsed the multiplication facts with a classmate. This process was done during a 2- week period. At the end of the 2-week period, the students were given a post-test (see Appendix C) to determine how well they know their multiplication facts. The results of the posttest and comparison to the pretest are included in Figure 5.

Student Number	**% Correct**	**% Correct from Pretest**	**%Increase/Decrease**	**Proficient/ Non Proficient**
001	100%	100%	0%	proficient
002	96%	100%	-4%	proficient
003	84%	76%	8%	proficient
004	78%	90%	-12%	proficient
005	99%	100%	-1%	proficient
006	99%	98%	1%	proficient
007	99%	99%	0%	proficient
008	99%	100%	-1%	proficient
009	91%	99%	-8%	proficient
010	91%	97%	-6%	proficient

011	93%	96%	-3%	proficient
012	94%	99%	-5%	proficient
013	87%	79%	8%	proficient

Figure 5. Post-test results.

Based on the post-test, 38% of the scores increased or did not change, and 62 % of the scores decreased. Since the percentage of change ranged from 1 to 12 percent, I concluded that the rehearsal method had little or no affect on their ability to perform well on multiplication facts.

After the post-test, the students were given a survey (see Appendix B) to determine their change in attitude toward math and their ability to perform well in Algebra I. The results are included in Figures 6 through 9.

Question 1: As a result of this program, I am more confident about my basic math skills.

Strongly Agree	**Agree**	**Undecided**	**Disagree**	**Strongly Disagree**
2	**7**	**2**	**2**	**0**

Figure 6. Question 1 from After Survey.

Question 2: As a result of this program, I have a better attitude toward math in general.

Strongly Agree	**Agree**	**Undecided**	**Disagree**	**Strongly Disagree**
5	**6**	**2**	**0**	**0**

Figure 7. Question 2 from After Survey.

Question 3: As a result of this program, I am more confident about my ability to perform well in Algebra I.

Strongly Agree	**Agree**	**Undecided**	**Disagree**	**Strongly Disagree**

2	**9**	**2**	**0**	**0**

Figure 8. Question 3 from After Survey.

Question 4: I feel this program would have been more effective if done at the beginning of the year while reviewing my math skills.

Strongly Agree	**Agree**	**Undecided**	**Disagree**	**Strongly Disagree**
4	**5**	**2**	**1**	**1**

Figure 9. Question 4 from After Survey.

The results of the survey showed 69% of the students surveyed are more confident of their math basic math skills as a result of this program. Eighty-four percent of the students surveyed have a better attitude toward math, in general, due to this program. Eighty-five percent of the students surveyed are more confident in their ability to perform well in Algebra I as a result of this program. Although the students surveyed had a better attitude after participating in this program, the percentage of students that increased their scores on the post-test did not support that increase in attitude.

Conclusions and Recommendations

It is interesting to look at the group of students that participated in this program. The original group of students, which included 35 ninth graders, did not turn in all the proper documentation, so I could not include their data. The resulting group that participated has overall grades from 59 to 84. Five of the students surveyed have a failing grade in Algebra I at the time of this program. The surveys from the students with failing grades indicated they did not like math and were not confident in their basic math skills. I feel this is a direct correlation to the success of students in Algebra I. The students who take Algebra I without good basic math skills have a much harder time succeeding in Algebra I, and seem to have an overall negative attitude toward math. This is a big area

of discussion among most of the other math teachers in my school. Why do we continue to get students who are unprepared to take Algebra I? We spend the first several weeks of school evaluating and helping them catch up on their skills so we can go forward with new information.

If I administered this program again I would start earlier in the year. I felt like some of the students felt like they were going backwards by working on multiplication facts since we were already deep into Algebra I by the time we worked on this program. As far as further research in this area, I think we need to look at why so many students do not comprehend math, and attaining better basic math skills before taking Algebra I. I do not know exactly how technology could help this situation because we have technology available to us now, but it doesn't seem to make a big difference in the overall outcome of students in Algebra I.

In general, this project has helped me realize how much work needs to be done to help students be successful in Algebra I, and the extra resources needed for those students who enroll without good, basic math skills.

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Appendix A

Student Before Questionnaire

Please respond to the following items by drawing a circle around the response that most closely reflects your opinion: strongly agree (SA), agree (A), undecided (U), disagree (D), or strongly disagree (SD).

I am confident about my basic math skills.

SA A U D SD

I like math and am glad to be taking Algebra I.

SA A U D SD

I am confident about my ability to perform well in Algebra I.

SA A U D SD

Additional Comments or Suggestions: (Feel free to use the back of the page)

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Appendix B

Student After Questionnaire

Please respond to the following items by drawing a circle around the response that most closely reflects your opinion: strongly agree (SA), agree (A), undecided (U), disagree (D), or strongly disagree (SD).

As a result of this program, I am more confident about my basic math skills.

SA A U D SD

As a result of this program, I have a better attitude toward math in general.

SA A U D SD

As a result of this program, I am more confident about my ability to perform well in Algebra I.

SA A U D SD

I feel this program would have been more effective if done at the beginning of the year while reviewing my math skills.

SA A U D SD

Additional Comments or Suggestions: (Feel free to use the back of the page)

_____
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Appendix C

Math Worksheet

Complete all of the problems.

1. $12 \times 8 =$	2. $4 \times 2 =$	3. $2 \times 1 =$	4. $12 \times 11 =$
5. $8 \times 5 =$	6. $10 \times 1 =$	7. $1 \times 10 =$	8. $10 \times 3 =$
9. $9 \times 10 =$	10. $12 \times 10 =$	11. $6 \times 10 =$	12. $7 \times 1 =$
13. $11 \times 3 =$	14. $7 \times 2 =$	15. $3 \times 10 =$	16. $9 \times 7 =$
17. $5 \times 7 =$	18. $6 \times 5 =$	19. $2 \times 1 =$	20. $9 \times 12 =$
21. $8 \times 6 =$	22. $4 \times 12 =$	23. $1 \times 11 =$	24. $10 \times 5 =$
25. $5 \times 8 =$	26. $5 \times 4 =$	27. $6 \times 9 =$	28. $4 \times 2 =$
29. $5 \times 4 =$	30. $4 \times 12 =$	31. $1 \times 8 =$	32. $7 \times 11 =$
33. $2 \times 11 =$	34. $10 \times 8 =$	35. $8 \times 1 =$	36. $4 \times 6 =$
37. $6 \times 11 =$	38. $2 \times 2 =$	39. $3 \times 7 =$	40. $5 \times 10 =$
41. $7 \times 11 =$	42. $1 \times 6 =$	43. $7 \times 7 =$	44. $12 \times 4 =$
45. $8 \times 12 =$	46. $12 \times 4 =$	47. $8 \times 9 =$	48. $11 \times 11 =$
49. $5 \times 2 =$	50. $1 \times 6 =$	51. $10 \times 12 =$	52. $1 \times 1 =$
53. $4 \times 8 =$	54. $6 \times 8 =$	55. $3 \times 3 =$	56. $1 \times 3 =$
57. $4 \times 10 =$	58. $5 \times 9 =$	59. $8 \times 1 =$	60. $5 \times 1 =$
61. $11 \times 10 =$	62. $4 \times 11 =$	63. $2 \times 3 =$	64. $6 \times 8 =$
65. $2 \times 10 =$	66. $11 \times 11 =$	67. $10 \times 2 =$	68. $6 \times 7 =$
69. $12 \times 2 =$	70. $8 \times 6 =$	71. $9 \times 5 =$	72. $11 \times 8 =$
73. $1 \times 10 =$	74. $11 \times 3 =$	75. $4 \times 5 =$	76. $12 \times 3 =$
77. $11 \times 1 =$	78. $6 \times 7 =$	79. $10 \times 7 =$	80. $1 \times 2 =$
81. $6 \times 11 =$	82. $8 \times 9 =$	83. $9 \times 10 =$	84. $12 \times 9 =$
85. $10 \times 1 =$	86. $6 \times 1 =$	87. $12 \times 11 =$	88. $8 \times 5 =$
89. $9 \times 2 =$	90. $12 \times 3 =$	91. $9 \times 8 =$	92. $10 \times 3 =$
93. $7 \times 12 =$	94. $2 \times 11 =$	95. $11 \times 9 =$	96. $1 \times 3 =$
97. $6 \times 2 =$	98. $11 \times 10 =$	99. $11 \times 6 =$	100. $5 \times 6 =$
101. $12 \times 3 =$	102. $6 \times 1 =$	103. $10 \times 8 =$	104. $10 \times 9 =$
105. $7 \times 7 =$	106. $4 \times 7 =$	107. $2 \times 12 =$	108. $10 \times 11 =$

109.	10 × 10 =	110.	11 × 2 =	111.	3 × 2 =	112.	2 × 8 =
113.	4 × 5 =	114.	5 × 2 =	115.	4 × 9 =	116.	1 × 1 =
117.	11 × 3 =	118.	11 × 12 =	119.	8 × 9 =	120.	11 × 8 =
121.	8 × 11 =	122.	8 × 12 =	123.	8 × 4 =	124.	3 × 8 =
125.	7 × 12 =	126.	5 × 12 =	127.	10 × 11 =	128.	4 × 9 =
129.	7 × 5 =	130.	9 × 4 =	131.	11 × 12 =	132.	3 × 7 =
133.	2 × 3 =	134.	5 × 5 =	135.	11 × 11 =	136.	1 × 4 =
137.	3 × 2 =	138.	8 × 5 =	139.	12 × 12 =	140.	1 × 8 =
141.	10 × 6 =	142.	5 × 9 =	143.	12 × 10 =	144.	10 × 3 =

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An Analysis of the Use and Benefits of an Interactive Simulation in the Social Studies Classroom

Joshua Parsons

Education 590, Fall 2007

The University of Tennessee at Chattanooga

The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149) has approved this research project 08-060.

Introduction to the Problem

Many social studies teachers periodically find themselves in the position of trying to make their class content more interesting to their students, and to create lessons which will allow them to remember the material covered in a more adequate manner. The traditional manner of teacher-led, class lecture, with its focus on rote memorization has fallen out of favor with many social studies instructors. Now the emphasis is on student-centered, interactive lessons which seek to actively engage the students in the material, and to give them a more hands-on experience. Numerous articles and studies have been conducted concerning the usefulness of student-centered instruction. Based in this body of work, I have decided to test the effectiveness of this method using an interactive simulation to teach a history lesson to a group of eighth-grade students. Through this experiment, I will compare the results of two class groups: (a) one taught through an interactive simulation; and (b) the other taught in the normal method of reading the chapter and teacher-led review of objective, guided-reading questions. I intend to show that the group taught by simulation will score higher on an objective quiz than the group that learned the material through traditional methods.

Review of Literature

A considerable body of research has been done in the field of student-centered teaching, particularly in the realm of interactive simulations. The general opinion among the pundits of simulations is that they make the material more “real” to the student by linking the content to real world operations and events (Clausing, 1987, p. 18). Teachers of subjects like social studies often have a hard time engaging the students.

By allowing the students to be exposed to the material in a familiar setting, they are more likely to comprehend the information and be able to retain it. Students are able to involve themselves in the story and this involvement can be used to engage their critical thinking skills. Hess (1998) points out that students apply their knowledge and skills in order to be successful at solving the problems in the scenarios they are acting out. Students can experience some of the problems of real world actors. By replicating these pressures in a simulated setting, the instructor can lead the students to consider solutions that they might not reach by simply reading about the material in the class text. Students are more apt to retain knowledge of an event in history or a concept if they learn that material in an interactive manner, rather than standard rote learning.

The benefits of interactive simulations have been touted by many writers, but some educators remain skeptical or unwary of different teaching styles. Some teachers feel that carrying out a simulation is a time-consuming and difficult process. Their belief is that all simulations are technology-based, or require expensive or unavailable resources. In reality, most simulations can be completed in just one or two class periods, and often use materials available in every classroom, or readily available to the teacher (Hess, 1998, p. 48). In many instances, the simpler the simulation structure, the more interaction there is between students. They must work together to find the solution to problems or work their way through an activity. Having the simulation take place wholly in front of a computer screen can effectively separate students from each other and defeat the group nature that the teacher may be seeking to create. Requiring the students to work together builds skills such as persuasion, notetaking, research skills, and negotiation.

Students also gain experience at cooperative learning as they work with their classmates (Hess, 1998, p. 50).

Working in cooperative groups also requires the students to develop their critical thinking skills. They must demonstrate their understanding of the facts of the simulation to participate effectively (Clausing, 1987). Because of this, it is often necessary that preparatory work be carried out by the teacher before the simulation begins. Students must be briefed on the circumstances of the simulation. In the case of social studies, they must know the facts surrounding the event they are recreating or interpreting. Such lecturing should be kept to a minimum or the lesson risks falling into the realm of normal, teacher-led instruction.

Despite the multitude of educators applauding the benefits of student-centered instruction, there are others who feel that traditional, teacher-centered instruction still has its merits, and that student-led instruction is a poor replacement. In *Teacher-Centered Instruction*; The Rodney Dangerfield of Social Studies, Schug, (2003) says that this more traditional method of instruction gets "no respect." He points to a long list of research that shows that students actually on average, perform better when taught material in the traditional lecture manner, than through student-centered learning. More teachers than are generally acknowledged seem to still use teacher-centered instruction, according to Schug, and they tend to have little success with student-centered approaches (p. 100). Why do these opposing viewpoints on instruction exist? Schug points out that most textbooks focusing on methods of teaching social studies devote most of their time to promoting student-centered, interactive, instruction methods, and little or no space to teacher-centered learning. Since interactive learning is the preferred method of

instruction, its merits are openly promoted, while those of lecture are as openly-rejected (p. 102). Despite opposition like Schug's, many educators still feel there is much merit in using student-centered instruction.

Some instructors have taken their preference for simulations to levels that often take them outside the classroom. In Canada, Shultz (1995) devised a program that would allow his social studies students to experience history first-hand at historic places in his community. He worked with local operators of heritage sites to create opportunities for his students to be immersed in the environment of a particular historical period. Having students role play in historical times allowed them to suspend disbelief and quickly gain a sense of authenticity (Schultz, 1995). To the students, the simulation becomes real, and they will make decisions as if they were actually in that situation themselves.

Other teachers utilize interactive simulations that are almost other worldly. Another educator, Massey, used a simulation to teach civics, culture, and other subjects to students by having them simulate living on a colony on Mars (Shields, 1996). By working in cooperative groups, students devised plans for establishing habitats on Mars and worked together to solve real-life difficulties. Such simulations have other applications from science to mathematics, as well as in social studies. Massey believes that using this interactive approach to learning gave her students a wealth of different perspectives and viewpoints. Although some writers, such as Schug, are doubtful of the merits of student-centered learning and simulation, many other educators have had first-hand experience with the methods, and have used them successfully.

Data Collection and Results

Data Collection

This project will consist of a single, class-period-length activity carried out with two separate classes. Students in one class will be given the information using the normal class method: a set of guided-reading questions from section one of chapter five in the text (see Appendix A for reading questions). The second class group will carry out an interactive simulation over the same material (the problems of taxation by Great Britain in the American Colonies, prior to the Revolutionary War). Both groups will cover the same material and then be given an objective quiz consisting of three questions after the simulation or lecture has been completed.

Selection of Subjects

The subjects for this case study will come from a group of eighth-grade social studies students in Hixson, Tennessee. In selecting the classes for the study, I will look at the average performance of the various classes. I will select two classes that are of relatively equal size and performance capabilities. After selecting the classes I wish to use, the lesson will proceed. Students in both classes will be given numbered slips of paper, with three digits for the simulation (experimental) group, and four digits for the traditional (control) group. This will protect the anonymity of the subjects and allow me to more easily separate my results. Students will be instructed to write this number on their quiz instead of their names. The performance of the groups will be evaluated to determine the percentage grade for the class, as a whole. No student's results will be singled out or identified.

Details of Simulation Procedure

For the case study group, I used a simulation based on an activity called "The King's M&M's," included in the book *American History Simulations* (Fischer, 1993). My own simulation was similar, as I had to make a few changes to fit my class structure. I changed the valuation of the object cards, and I used slips of paper to represent money, as opposed to the M&M's called for in the original simulation. In the simulation, students will represent two groups: American Colonists and the British Government. In order to determine their roles, students will draw cards from a hat. The role printed on the card (colonist, parliament, tax collector, etc.) will determine the group to which the student will be assigned. After drawing cards, the students will move to their respective groups. The student who draws the "King" card will act as monarch. Two students will draw cards to act as Parliament, with two others playing the role of tax collectors. The remaining students, who are playing the colonists, will each be given ten slips of paper, representing money. This will be used during the simulation.

As the simulation begins, I will give the group some introductory information to set up the activity and familiarize them with what they will be doing (the class will also have had some introductory information from being prompted to read section one of the chapter the night before). Next, the students acting as Parliament will draw a card from a prepared stack. These cards have items written on them which will be "taxed." These are items which all or most students are likely to have with them (textbooks, "hoodies," shorts, etc.). Also written on the card is the value of that particular item (1, 2, 3 slips of paper). The Parliament will announce the item and value, and the "tax collectors" will go around the room, collecting that money from each student who has that item. The tax

collectors will then turn over the money to Parliament, which, in turn, turn over the money to the King. From this simulation, students will be given a sense of the arbitrary nature of taxation prior to the Revolutionary War, and will see how such methods could spark resentment among the colonists.

Details of Control Group Procedure

I carried out the experiment in my fourth and fifth period Social Studies classes since I felt these two groups were the most similar, performance-wise. On the day prior to the case study being carried out, the students in both periods were prompted to read section one of chapter five in their textbook which covered the Taxation without Representation controversy. It was standard procedure in the class to assign reading for the next class day, so this procedure was normal for the students. The students were told to read the material and be familiar with it since we would cover it the next day.

Performance of Case Study

Performance of Activity in Control Group

On the following day, due to the rotating nature of the school schedule, the fifth period class (which I had selected as my control group) was first. I handed out the guided reading worksheet to the class and the students worked individually to find the answers from their reading in the chapter. After sufficient time had elapsed, we reviewed the sheet and I lectured to the class over the main points of the section, as was my normal procedure.

After the class had been led in the lecture, I administered the quiz over the material we had covered. The quiz was relatively short, and took just a few minutes for

the students to complete. They were instructed not to use their names on their quizzes, but to use the numbers they had chosen earlier.

Performance of Simulation in Experiment Group

The fourth period class (chosen as my experiment-simulation group) came to class that afternoon and was instructed to draw a random card from a hat. This hat contained the identity cards for the simulation. One student drew the "King" card and became monarch (I use this gender neutral term since a female student drew the card). The other students drew the colonist, tax collector, and Parliament cards. At this time, I also had the students draw their ID numbers.

Next, the simulation began. The class was separated into two groups: the colonists on one side, and the Britons (Queen and Parliament) on the other. The students playing the tax collectors would shift between the two groups. As the simulation began, I reminded the students of some of the material they had read, and gave them some background information on the circumstances of that time period. The Parliament members each drew a card in alternating fashion. They handed the card to the Queen, who announced what was being taxed, and the amount. The tax collectors then went to the student "colonists" who qualified to pay the "tax," and they handed over the amount of paper slips due. This "money" was then handed over to the government. As the simulation progressed, I noticed that students who had to give up money (especially those who paid frequent and expensive taxes) were reluctant to do so. When an item was chosen that everyone in the class owned (such as a "desk" or "textbook") the protest was especially vociferous. I told the students that this was the sort of outcry that was being heard in the colonies, at that time. We then discussed some of the items that the British

were taxing in the Thirteen Colonies. The simulation continued through the class period, however, I left enough time to give the quiz. This was administered to the students at the end of the class period. (See Appendix B.)

Analysis of Results

After grading the quizzes, I tallied the percentage of correct scores. The two class periods actually had slightly different numbers of students, but this difference was negligible. My main method of assessing the scores in the two groups was to look at the number of 100% in comparison with the other percentages. Since there were only three questions on the quiz, the possible scores were 100%, 67% 33% and 0%.

Results for both classes were generally high. The scores for the control group (fifth period) were rather good, with 14 out of 23 students receiving 100%. Eight students received 67% and two students received 33% and 0% respectively. A breakdown of the test percentages is presented in Figure 1.

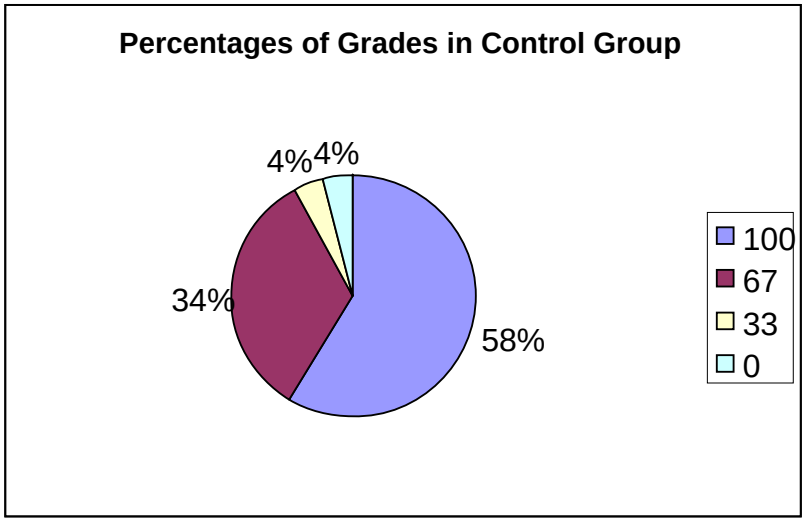

Figure 1. Control group scores.

A majority of the class scored rather well on the quiz. One probable reason for this is that the assessment was given only a short while after the class has received a lecture over the

material. Given the time constraints under which I performed this case study, I felt that such circumstances could not be avoided.

I next analyzed the results for the quiz from the simulation (experimental) group. Surprisingly, the results for this group were comparatively similar to those for the first class. Of 26 students, 17 scored 100%, for a total of 60 percent of the class. Four students scored 67 percent (16% of the class total) while there was a larger number of 33 percent scores (20% of the class total). As with the control group, one student scored a zero. The class results are presented in Figure 2.

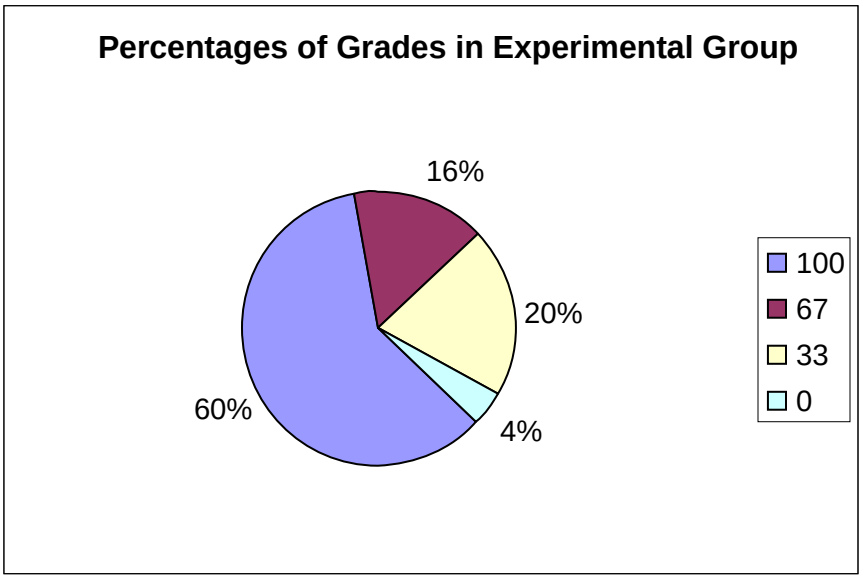

Figure 2. Experimental (simulation) group scores.

At first glance, it would appear that the rate of improvement in the experiment group was negligible. There was only a two percent difference in the number of 100% scores. The greatest difference came in the lower scores. There were fewer students who scored 67 percent in the experimental group (16% for the experimental group as opposed to 34% in the control group).

Conclusions and Recommendations

From the initial analysis of the quiz results, it would seem that the difference of percentage of passing scores was negligible. There was just a two percent difference between the two classes. Adjusting the percentages to compensate for the slight class number variation, the passing rate was nearly equal. From these results, I feel that my hypothesis was not quite borne out. Although I did see a slight increase in 100% scores, I do not feel that this increase is totally the result of the different teaching methods. In actuality, I saw an increase in the number of students who scored 33 percent in the experimental group.

I feel that the results I achieved were partially due the close proximity of the quiz to the case study, itself. I do not feel that I allowed enough time to elapse between the two activities. Ideally, I should have allowed at least one full class day to elapse between the simulation and the quiz. However, the time constraints of the placement did not allow this. When the quiz was administered, the information was still very fresh in the students' minds (either from the lecture/worksheet coverage or the simulation). They appear to have rather easily recalled the information we covered. Also, perhaps the quiz was too brief in the material covered. I asked only three questions, which may have made the amount of material to recall too small. I should have asked more questions over more specific material, which would have caused the students to engage in more detailed recollection than the questions I did ask, which I feel were too generalized.

I conferred with my cooperating teacher and he shared my opinions. Generally, it is favorable to allow more time for the students to absorb the material, and allow them to study it. In this way, you are testing their long-term recollection of the information. He

also agreed with me that I should have included a few more detailed questions which would have led the students to dig deeper to recall more information.

I generally feel that this case study was beneficial to the students. Using a simulation to teach the material did make it more interesting and relevant to them. They could identify more readily with the lesson since I taught it in a manner which grabbed their attention and engaged their interest. Feedback I received from the students indicated to me that they enjoyed performing the activity, and my cooperating teacher was eager to use the simulation in the other class periods, as well. I think I would use this simulation again, and might consider modifying it for use in higher grade levels. It would be possible to integrate technology into this relatively low-tech activity, but I feel that such an addition would take away the communal aspect of the simulation. Students interacted with each other more during the simulation then they normally would with their guided-reading activity, which is an individual task. This is the sort of activity which requires very little additional funding to be completed successfully. The average social studies department could implement these sorts of simulations at almost no extra cost. Of course, more elaborate programs, such as that carried out by the above mentioned Shultz can achieve excellent results and be a rewarding experience for the students and teacher, but positive results can also be achieved with the modest resources I had at my disposal. There is a place in the social studies classroom for any activity that can more actively engage the students and make the lesson come alive for them.

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Appendix A

Evaluation Instrument 1

Chapter Five Section One, Guided Reading questions for Control Group

Taxation without Representation

p. 133
1. Why did Britain start forcing the colonies to pay new taxes?

2. What law lowered the tax on molasses imported into the colonies?

p. 134
3. What was the Stamp Act?

4. Who was the member of the Virginia House of Burgesses who led the protest of the Stamp Act?

5. What group did Samuel Adams help to found?

6. In what ways did many colonists protest the Stamp Act?

p. 134
7. How did Parliament respond to these protests?

p. 135

8. What new set of laws did Parliament pass in 1767?

9. What were some items taxed by these new laws?

Appendix B

Evaluation Instrument 2

Case Study Quiz

1. Why did the English Parliament force new taxes on the colonies?

2. How did the colonists protest new laws such as the Stamp Act?

3. What were some items taxed by the Townshend Acts?

The Effects of Visual Cues on Kindergarten Pre- and Post-tests in a Social Studies Unit

Rachele Potter

Education 590, Fall 2007

The University of Tennessee at Chattanooga

The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149) has approved this research project 08-067.

Introduction to the Problem

Most kindergarten students come in contact with cartoon or clip art pictures on a daily basis. The majority of products created for the kindergarten classroom include graphics that are cartoonish in nature, and often not representative of real life. Many studies have been conducted to determine children's preferences with regard to pictures, graphics, photographs, and illustrations. However, very little research has been conducted to discover whether or not this overexposure to cartoon or clip art pictures has a negative effect on students' ability to access prior knowledge when shown actual photographs of similar objects.

Review of Literature

Numerous studies (Bailey, O'Grady-Jones, & McGown, 1995; Cleaver, Scheurer, & Shorey, 1993; House & Rule, 2005; Kleinman & Dwyer, 1999; Stokes, 2001) have been conducted with the intent of learning about young children's preferences for pictures, graphics, animations, photographs, and illustrations. While some studies focus on black and white versus color, other studies focus on the level of detail or the types of pictures shown to young children. Additionally, there are studies focusing on the use of animated graphics and their use in the classroom, while other studies focus on the integration of visuals into the creative writing process. Each study is practical, in its own right, and has made an impact on the continuation of study on the subject of visuals in early childhood education. Furthermore, when continuing the study of this subject, each previous study becomes essential to the success of the study following.

One study, conducted by Kleinman and Dwyer (1999), concluded that color is, in fact, an important variable when using pictures to determine academic achievement.

Specifically, they suggest that “color is confirmed as an important instructional variable for facilitating achievement at least at the concept level of learning” (Kleinman & Dwyer, 1999, p. 6). Implications from this research indicate that, while color is an important variable, it is essential that the variable be “used at the appropriate level of learning” (Kleinman & Dwyer, 1999, p. 6). Similarly, in a study intended to learn what kinds of pictures preschool-aged children prefer, House and Rule (2005) found that “preschoolers appreciate color” (p. 286). Nearly every picture reviewed by the preschoolers “received one comment about color and illustrations with bright colors received more” (p. 286-287). This study also introduced illustrations versus photographs of real bears. The researchers concluded that “the color and mood of an illustration generated attention, but the presentation of the subject (line drawings, photographs, design or cartoon like illustrations, realistic, narrative-style) became insignificant as the interviews progressed” (p. 290).

However, Cleaver, Scheurer, and Shorey (1993) found that, as long as the teacher promotes active learning, students can both enjoy and learn from black and white pictures, as well. This study was conducted using picture books with purely silhouette illustrations. While some students found it difficult to understand the pictures, most were positive in their comments and suggested they enjoyed the books. This study confirms that, if the educator promotes a positive experience with the material, students can actively enjoy the materials being presented to them. However, it also suggests that, perhaps, some students do have difficulty processing information presented to them in purely black and white graphics. Even though many students had a positive experience

with the activity, others did have difficulty following along or making sense of the illustrations presented to them.

Many researchers feel that, regardless of color or medium, any use of visual literacy is important in students' education (Stokes, 2001). Stokes also suggests that, due to learner differences in every classroom, the use of visuals is essential to the educational growth of every student. Many students grasp concepts more readily if the concepts are presented to them visually or actively, rather than the frequently used "orderly, sequential, verbal-mathematical, left-hemisphere tasks" (¶ 5) that are often seen in education today. Similarly, Bailey, O'Grady-Jones, and McGown (1995) suggest that visuals should be integrated into other areas of education such as writing. Their study shows that students who use visuals to enhance their writing techniques not only create more than a writing sample, but also learn a lot about themselves as learners.

Each study conducted on this subject discussed the necessity of children's visual literacy as they progress through school. While some discussion is still continuing on which kinds of visuals are most age-appropriate, every researcher believes that visuals, in general, are a vital part of every child's education.

Data Collection and Results

Data Collection

Subjects

The subjects for this study consisted of one kindergarten class in a Title I school in the Hamilton County school system. Of the 15 students in this class, only 11 student's scores were used for this study. Two students were absent for either the pre-test or the

post-test, and two other students did not return their permission slips to be included in this study.

Methodology

This study was conducted over a 2-week period. At the beginning of the 2-week period, each student took a pre-test covering community and community helpers. Five students took a pre-test made up of photographs of actual people and places. Six students took a pre-test made up entirely of clip art. Both pre-tests included the same information in the same format. The only difference was the type of pictures used to present the material. Over the course of the following 2 weeks, the students were taught a unit about community and community helpers. Most of the materials used for this unit consisted of clip art or drawn pictures of people and places found in a community. The students did watch a few videos with actual footage of real people and places in the community; in addition, they got to meet actual firemen and sit in a real fire truck. At the end of the 2-week unit, students were given the exact same test as they took 2 weeks prior as their post-test for this unit.

Instrument

Page one of the photographs only test has four pictures. From top left to bottom right, there is a house, a church, a school, and a beach. The question at the top of the page asks, “Which of these things does not belong in our community?” Page two of the photographs only test has six pictures. On the left hand side, going down the page, there is a firehouse with firetrucks outside, an aisle in a grocery store, and a police station with a police car outside. On the right hand side, going down the page, there is a police officer

in uniform, a firefighter in uniform, and a grocer standing in front of the produce section of a grocery store. The question at the top of the page asks, “Who works here?”

Page one of the clip art only test also has four pictures. From top left to bottom right, there is a house, a church, a school, and a beach. The question at the top of the page asks, “Which of these things does not belong in our community?” Page two of the clip art only test also has six pictures. On the left hand side, going down the page, there is a firehouse with a firetruck outside, a picture of a woman in the produce section of a grocery store, and a police station with a police car outside. On the right hand side, going down the page, there is a police officer in uniform blowing a whistle, a firefighter in uniform with a water hose, and a grocer at a register. The question at the top of the page asks, “Who works here?”

Recruitment and Selection Plan

This study was conducted during my induction experience. The class chosen for this study was the class to which I was assigned for my kindergarten placement. The students were placed in this class prior to my connection to them. I had no say in which students would be included in this study.

Quality of Eligible Partners

The students benefited from the pre- and post-tests used for this study because the data could be shared with the regular classroom teacher, who could then base the students’ educational needs on their performance on the tests. In addition, any other kindergarten teacher and their students may benefit from integrating the findings of this study into their classroom curriculum.

Instructional Plan and Leadership

Time commitments. This class of kindergarten students spent a total of 2 weeks learning about the community and community helpers. In order to teach this unit effectively, the use of many classroom materials was needed. Computers, VCRs, tape players, paper, pencils, crayons, art supplies, guest speakers, and pre-made materials were all needed for this unit.

Results

Students taking the real photographs test showed no increase for page one from the pre-test to the post-test. However, each of the five students taking the real photographs test scored 100% on page two for both the pre-test and the post-test. In addition, students taking the clip art test showed no increase for page one from the pre-test to the post-test. For page two of the clip art test, students showed a 50% growth from the pre-test to the post-test (see Figure 1).

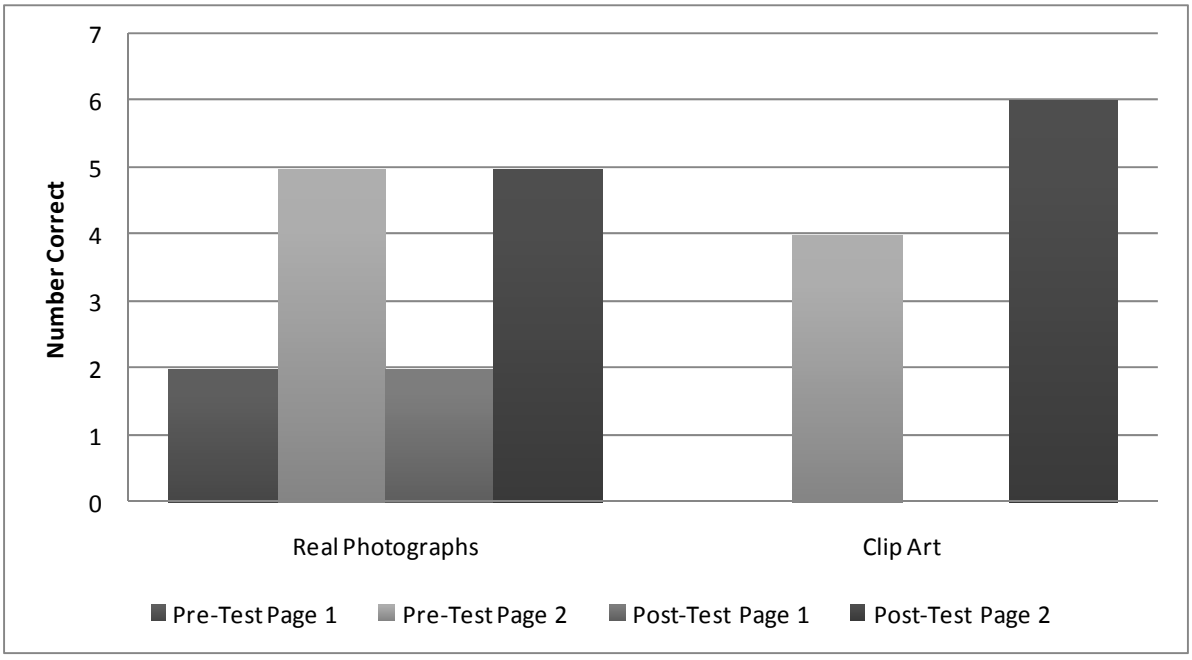

Figure 1. Pre- and post-test data results, showing the number of students with correct answers.

Conclusions and Recommendations

Conclusions

Based on the nature of this study, and the materials used for the social studies unit, the increase in knowledge from the pre-test to the post-test on the clip art version was expected. While there was no difference on page one of the clip art tests, the increase on page two is significant enough to suggest the materials used for the community and community helpers unit were factors in the students' educational growth during this 2-week period.

Recommendations

I recommend a larger sample size be used to validate the findings of this study, and further studies, on this topic. While my sample size was limited to one classroom of kindergarten students, future research may be conducted on a larger scale to ensure validity. In addition, future studies may focus on using only clip art or cartoon materials versus only real photographs or true-to-life materials to teach the unit. Such studies may include the use of technology, such as videos and Web sites, as a device for incorporating more true-to-life information into the curriculum.

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Implementing Social Skills in Kindergarten

Education 590, Fall 2007

Tamatha Roberts

The University of Tennessee at Chattanooga

The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149) has approved this research project 08-070.

Introduction to the Problem

Think back to your first day of kindergarten. All of the children were not happy. When children start kindergarten, some of them have never been in a previous social setting. This makes the adjustment phase difficult. Throughout the whole school year, but especially during the first few weeks, teachers have to try to figure out how to get the class members to socialize with each other. I have worked in the school system as a kindergarten assistant for 3 years. I have seen this problem continuously.

However, some children that have been in a social setting in previous years enter their classroom with no problem. One of the most interesting and important facts I found was 25% to 85% of children with social adjustment problems have beginning reading deficits (Benner, Beaudoin, Kinder, & Mooney, 2005, p. 251). Social skills are a part of a child's life that should be formed from the youngest of ages.

The problem I see is children entering kindergarten not having learned the proper social skills needed to participate in the daily planned activities by the teacher.

Review of Literature

My literature review suggested that my problem could be solved by these three approaches: (a) small groups, (b) higher literacy skills, and (c) a structured classroom.

One way to start the year practicing good social skills is to play games. The teacher sits the students in a circle with a ball. The teacher asks a question such as, "What is your name?" or "What is your favorite color?" The students roll the ball to each other and have to answer the question when the ball comes to them before they roll it to another classmate. The activity is one way for the students to learn names and some things about each other.

By starting with small groups in the classroom, during center time, for example, the small groups will increase the structure. Also, if a teacher has structured small groups, the teacher can increase her time with reading groups; therefore, there will be higher literacy skills. The teacher I will be observing is going to focus on the idea of small groups using games and social activities.

Tennessee standard (Tennessee Department of Education, 2007) K.1.07a states, "Build vocabulary by listening to literature and participating in discussions." The teacher had an activity known as "talk partners." During this activity, the teacher started by reading a book to the class; the students were gathered on the rug in group time. After the teacher finished reading the book, he had the students face their "talk partner" and retell the story. The students took turns and told the story to each other. The students were very involved while the students were telling the story using their hands and gestures. As the students did this activity, the teacher walked around the circle and listened. After the students were finished retelling the story to each other, the students turned back around and faced the teacher. The teacher then asked the students some questions to enhance their comprehension in addition to the work of the "talk partners." Research shows that nondirective teaching is linked to children's social interactions. When teachers have children learn in groups and do not stand in front of the class and lecture, it helps children socialize and make friends more easily.

Wiseman (2003) talked about a teacher named Mrs. Milner, whose teaching style was described as "dialogic" (Wiseman, 2003, p. 802). She encouraged her students to learn, and wanted her students to ask questions. She would allot extra time in her lesson plans for story time to provide time to stop for questions or stories the children might

have. Mrs. Milner considered this process a way for the children to use their social skills and communicate with each other and her. Mrs. Milner encouraged discussion during this time. Tennessee standard (Tennessee Department of Education) K.1.09b2 states, “Check for understanding after reading by retelling story in own words.”

The teacher I observed used this activity, as well. As the teacher would read a story, the teacher would stop every so often and ask the students questions about the story. The teacher would also stop and let the students ask their own questions.

Church (2006) talked about a teacher who had her class create placemats with their faces and names on them. The teacher had the children take turns placing the placemats on the circle for group time each day. This process gives the children practice in finding their own name and their friend’s name. The child also learns how to spell the names of the children in the class, especially if the child wants to sit by their friend.

When it came time to write in the students’ journals, the teacher would give the students an idea or a thought. The teacher would then pair each student with a buddy and have the two students write a story pertaining to this idea. The students may walk around the room and look at how to spell words that are hanging on such things as the word wall. Even if the students could not write their story, this process gave them time to share their ideas and thoughts and interact with each other. Tennessee standard (Tennessee Department of Education) K.1.07e states, “Read some words by sight (e.g., the, has, an, can, run and color and number words).”

This activity matches to what an article interviewing Fran Ravid (Scholastic, 2003, p. 50) discusses. The Responsive Classroom lists seven principles to teaching social skills. Five of the principles they list correspond with kindergarten social skills:

1. The social curriculum is as important as the academic curriculum. In the early childhood classrooms, the focus is on the following:
    - Helping the children use each other's names
    - Teaching children how to cooperate and solve problems
    - Be supportive of your children's language so they can interact with you and one another
2. Give your children chances to share their thinking during the day. Cognitive growth occurs through social interaction.
3. Take time to observe and listen to your children during the day. Make sure you know the children you teach.
4. Teachers should be a role model for their students and show good social interactions.
5. Children need to learn specific social skills to be successful academically and socially:
    - Work and play together nicely
    - Be able to say what you need and think
    - Be able to take care of yourself, your friends, and your surroundings. (p.50)

Studies also have shown that a smooth transition into kindergarten provides students with higher levels of social skill and academic achievement. Studies (Rimm-Kaufman, La Paro, Downer, & Pianta, 2005) show that children in kindergarten socialize and cooperate with their peers more if they are in a small-group setting. This same study also found fewer behavior problems and greater student achievement in classrooms of

teachers who used more small-group activities along with more social interaction between the children. One study (Brenner, Beaudoin, Kinder, & Mooney, 2005) shows positive association of reading skills and social adjustment.

The teacher I worked with would place children in groups of two or three toward the end of the day and let each group have a box of manipulative to play with in the room. This activity gave the students a chance to have a hands-on learning activity, but also to interact and socialize with each other. The teacher also grouped children in groups of three or four during morning center time for literacy. The students would do their centers in groups. The students would do one or two centers each day.

Area of Focus Statement

The purpose of this study is to describe the effects of implementing a "games and rewards" strategies classroom within the first 9 weeks on kindergarten student socialization. I will focus directly on kindergarten students, the way they interact with each other, and the different areas in which they interact (e.g., small group, center time, and large group) using games and rewards. I will observe the students as they interact in the classroom with the teacher and with other students using two observation checklists I have created. (See appendices A and B.)

Plan

Research Question

How do you implement games and reward strategies for kindergarten students? The independent variable will be the small groups into which the teacher places their students; the dependent variable will be the social skills that develop.

Intervention

To implement social skills, the teacher will divide the class into small groups during center time and other activities throughout the day.

Data Collection and Results

The mean age of the students at pre-observation was 5. The mean age of the students at post-observation was 5.11. The mode was 5 at pre-observation and post-observation. There are 18 students in the class; 14 students (78%) had no previous experience in a social setting.

I will use observation notes at the beginning and end of the research to determine if the children have made progress. Observations will be made according to the following:

- How often the children participated during discussion time/large group time.
- How often the children socialized with other children throughout the day.
- How often the children made eye contact with other children.
- How often the children initiated conversation with each other.

I will also talk with the classroom teacher and talk with other teachers, informally, to receive their opinion about how the teachers think the students are socializing with each other.

I will use student journals pre- and post-intervention to see if student writing has progressed compared to social skills. I will be checking to see if working with a partner in the journal center, and writing stories together, has improved writing and their social skills.

I will use any notes the classroom teacher has recorded and are permissible to view to determine if he has recorded anything about the children's social skills that I have missed.

I will either talk to the classroom teacher or look at the students' portfolios to determine if the children have attended a previous social setting. Most of the time, if a child has stayed at home or with a sitter previous to kindergarten, the child has a difficult time adjusting to school.

Resources

The teacher will need planning time to prepare for the small group activities they will be implementing in the classroom. The teacher will also need materials to make journals for each child. Materials needed include construction paper, copy paper, crayons, and pencils.

Timeline

I will play games during large group time for the children to get to know each other. The class will create a "buddy system" in which each person is responsible for making sure their buddy has somebody with which to play and sit. During small group time, I will group the children in groups of three for each activity and the class will switch centers throughout the day, keeping the same centers throughout the week. The class will also have a "reward system;" if the child is observed doing something right, that child will get a star. Once the child gets 10 stars, the child, may select a prize. On the first day of each week, the class will switch buddies, and groups for centers, and the center activities will change.

Implementation

Although I have been in a classroom for over 5 years, it was exciting and interesting to gather information somewhere new. The teacher had high knowledge of what he was doing. The teacher has been teaching for quite a few years. One could tell the teacher had been teaching kindergarten for a number of years and could see the social problems I saw when I worked in kindergarten. The teacher knew what activities to do with the students to keep them busy, and increase their social skills, along with their learning skills. The activities the teacher did addressed a specific educational goal, as well as increasing social skills. The activities I observed will help me tremendously in my teaching career. The activities will not only help increase kindergarten social skills, but they will also increase social skills at any grade level. From my observations and research, small group activities will help social skills and learning abilities in any grade. Any grade level of students will be able to pair with a partner and write a story, or turn to a “talk partner” and retell the story.

There were 18 children in the kindergarten class. After doing my pre-observation and post-observation, I concluded that 13 out of the 14 students who had never been in a social setting before had an increase in the social skills. This is 93 percent.

Conclusions and Recommendations

The next time I make the decision to engage in this type of research, I would be the classroom teacher where I could be with the students all day, every day. This type of research would be more interesting and thorough if the classroom teacher was conducting it. The teacher would be able to make notes throughout the day and observe the students in every capacity.

From the articles I researched, I learned children have more opportunity to learn through education and social skills if they are in smaller groups. The smaller groups also decrease the chance for behavior problems.

Social skills are very important, and we, as teachers, should take every opportunity to help students succeed in their social skills, as well as their education. Putting students in small groups increases the chance for students to interact with each other on a more personal basis. Technology would be a good way of having the students learn in small group settings.

Teachers are required to attend professional development sessions throughout the year. One great professional development opportunity for teachers would be to give the teachers options of opportunities they can use in the classroom to promote social skills along with learning. To my knowledge, grant money can be received for many types of educational needs. I would assume this type of research would be a great opportunity to use grant money.

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Appendix A

Observation Checklist 1

Date _____	**welcome time / act.**	**talk partners**	**read aloud**	**recess**	**development centers**
*times are approximate	until 9:00*	10:15 - 10:45*	11:20 - *	12:20 - 12:40*	1:00 - 1:30*
Child 1					
Child 2					
Child 3					
Child 4					
Child 5					
Child 6					
Child 7					
Child 8					
Child 9					
Child 10					
Child 11					
Child 12					
Child 13					
Child 14					
Child 15					
Child 16					
Child 17					
Child 18					

Appendix B

Observation Checklist 2

Date _____	child initiates social interaction with other children	child does not move away when another child sits/stands beside them	child engages in social conversation with other children when prompted by teacher	child engages in social interaction with other child(ren) when other child(ren) initiate social interaction with them	child talks out problem with other child
Child 1					
Child 2					
Child 3					
Child 4					
Child 5					
Child 6					
Child 7					
Child 8					
Child 9					
Child 10					
Child 11					
Child 12					
Child 13					
Child 14					
Child 15					
Child 16					
Child 17					
Child 18					

The Application of Positive Reinforcement in a High School Setting

Richard H. Rogers

Education 590, Spring 2007

The University of Tennessee at Chattanooga

The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149) has approved this research project.

Introduction to the Problem

I choose to work with, and report on my experience with, using a reward system in my classroom for several reasons. I have been teaching at this high school for almost 3 years, and it has been my experience that many of the students inside and outside of my class are, generally, apathetic about their academic pursuits. I am sure that there are many social, economic, cultural, parental, pedagogical, and individual reasons or theories that could explain why many of our students have trouble in attaining high academic achievement. Nevertheless, I wanted to discover a way in which to motivate my students to perform better in the classroom and to, simultaneously, improve student behavior. It has also been my experience that, when students are focused, engaged, and motivated, that there are fewer class problems and the class operates more smoothly. I have also observed in my teaching praxis that student peer pressure is an operative principle in every classroom. Since this dynamic exists, I hoped to utilize positive student peer pressure and elected to largely work with whole-group rewards. In terms of grades, I believe that if a student works hard, completes their assignments, and participates well in the class then they should have the opportunity to receive a passing grade. Thus, the reward system I devised was created to improve student achievement, promote better student behavior in the classroom, and decrease the number of students that fail my class.

The issues of academic achievement and high stakes testing are currently very hot topics in the national, state, and local arenas. The field of education has undergone tremendous changes and been highly characterized by accountability since the introduction of *No Child Left Behind*. For better or worse, all states, school districts, and teachers must adhere to the specific requirements that their States have adopted and the

particular accreditation process to which their individual school or district adheres. In terms of the local level of education, many parents understand, or are beginning to understand, that, for their children to succeed in the global economy, their children must receive the best education possible. The idea of academic achievement and accountability can be witnessed concretely in this community. Last year, the town raised property taxes so that the dilapidated middle school could be replaced, and have located the new middle school between the high school and elementary school. The new middle school will be opened this fall, and the city council hopes that this new building will attract more students to the local school system, beginning to curve the loss of city students to other schools in the county.

The topic of student motivation is, indirectly, a staple of all school curriculum because it effects how well students perform and achieve on high-stakes testing. In Tennessee, students cannot graduate from high school unless they have passed all of their Gateway tests. Thus, students are formally motivated to pass these tests so that they may receive their diplomas upon graduation. However, individual core subject teachers are charged with the duty of adequately preparing and motivating their students to pass these tests and are accountable for the outcomes. Although foreign languages are currently not tested under the Gateway rubric, many universities and community colleges are requiring, or will soon be requiring, that all of their students receive a specific number of high school language credits before being accepted into the university; otherwise, they will have to take these courses as part of their conditional admittance. Our school counselor explained this situation to me at the end of the previous school year, and said that UT-Knoxville is currently implementing this requirement. This situation has caused

our school to rethink its curriculum, in part, and, in the spring, I will be teaching a Spanish III course for college-bound juniors and seniors.

Review of Literature

Akin-Little, Eckert, and Lovett (2004) begin the discussion of extrinsic and intrinsic reinforcement by outlining the debate that has been occurring for the past 30 years in classrooms, businesses, and social settings. Some theorists have favored the use of extrinsic rewards to promote desired behaviors or actions, while other theorists have cautioned against utilizing extrinsic rewards because of their adverse effect on intrinsic motivation. The article also delineates what extrinsic and intrinsic motivation are, and explains the different ways each has been understood historically. In addition, this article explores seminal studies in cognitive and behavior literatures that address the extrinsic/intrinsic dichotomy. It also reviews the evidence of current programs that are used in school settings. According to the evidence this review explores, there is little evidence that points to a detrimental effect in utilizing external reinforcement in a school setting. However, this article does outline some of the best practices that teachers and school psychologists have discovered in the use of extrinsic reinforcement.

Bohanon, Fenning, and Carney (2006) discusses the findings of a case study where the application of a “school-wide positive behavior support” (PBS) was implemented in an urban high school environment. The impact of the implementation was measured by using qualitative interviews and observations, a school-wide evaluation tool, the Effective Behavior Support Survey, the Student Climate Survey, and office disciplinary referrals. The study found that the implementation of PBS met with some success. The level of implementation of PBS was recorded to be 80% schoolwide, and

the school's teachers increased their level of perceived priority for implementing PBS. Bohanon also notes that there was a decrease in the number of student discipline referrals to the office, as well as a decrease in the number of students that needed secondary and tertiary support. The results of this study seem to indicate that positive behavior support may have important ramifications for promoting positive student and teacher outcomes in urban high school environments.

Capstick's study presented the perceptions of both teachers and students at a pupil referral unit. The principal goals of the study were to discern whether teachers and students perceive the same rewards as effective, to see if students and teachers perceived that the rewards offered actually changed behavior, and if the rewards motivated children to learn. The study was comprised of 11 students and 8 teachers. Every participant that was involved in this study completed a questionnaire, designed by Capstick, to measure the goals of the study and how effective the reward system was in accomplishing those goals from the student perspective and teacher perspective. The results from the questionnaire were somewhat mixed. The teachers perceived that the teacher-based rewards were effective in improving student behavior and in motivating them to learn. Conversely, the results from the student questionnaire demonstrated that they perceived that the reward system did not motivate them to learn or improve their behavior. Due to the nature of the findings, the author believes that the reward system needs to be revised to make it more effective.

In this article, Maag begins the discussion on the misuse of positive reinforcement in educational settings by discussing the historic choices that educators have made to deal with student disruptions. These approaches include the use of punishment practices such

as removal of offending students from the classroom, restitutional activities, in-school and out-of-school suspensions, and expulsions. Maag concedes that these practices may make the school environment safer because problematic students have been removed, but, simultaneously, they have little effect on encouraging students to perform socially desirable behaviors. In addition, Maag argues that the strategy of implementing positive reinforcement is not effectively utilized in educational settings for three reasons:

1. Positive reinforcement is oftentimes ignored or misused because Americans largely favor punishment practices to correct undesirable behaviors in society.
2. The punishment paradigm is commonly part of the educational establishment and it distorts professional educators' knowledge of key terms that are associated with managing student behaviors by using positive reinforcement.
3. Positive reinforcement is a natural and universal principle that is operated in every classroom, despite the beliefs of many educators that this is not so.

In summary, Maag argues that the techniques and strategies of positive reinforcement must be implemented in schools so that educators, parents, researchers, and the larger public can plan for the occurrence of appropriate student behaviors, rather than reacting to the occurrence of problematic ones.

Unlike previous articles, the author of this study presents an overview of the large, and often contradictory, amount of research focused on the effects of intrinsic and extrinsic motivation in school settings. However, the focus in this study is distinctive

because there has been an unimpressive amount of research done on how motivations change across school years. The article argues that research has demonstrated that intrinsic motivation leads to better school outcomes from elementary school to the university level, as opposed to extrinsic motivation. Nevertheless, current studies seem to show that students are less intrinsically motivated and more extrinsically motivated as they progress from grade to grade, especially after a school transition. Provided with this type of evidence, the article argues that a study must be administered on the assessment of student change in motivation and its impact. With this impetus in mind, this research endeavor administered a 3- year questionnaire to 646 students in the 8th, 9th, and 10th grades. The researchers discovered that the students' intrinsic motivation and extrinsic motivation decreased gradually from the 8th to 10th grade. Such research is highly important when determining whether a rewards-based motivation system is even feasible or worthwhile at the high school level.

Stockdale notes that national surveys demonstrate that student motivation is a primary concern of teachers and that the lack of student motivation is a principal stressor for teachers. In addition, research has demonstrated that student motivation tends to decrease from middle school through the high school years. Nevertheless, few educational publications address the best ways that teachers can establish motivational principles in their own classrooms. Despite the current lack of educational resources relating to student motivation, there exists a body of research that discusses the importance of extrinsic rewards on task engagement. This research, which is based on the behavioral model of B. F. Skinner, has shown that a variety of extrinsic rewards, e.g., grades, stars, stickers, coupons, tokens, notes homes, and privileges, can be used to

promote task engagement and increase the academic performance of reluctant learners. In addition, this research has also shown that exceptional and nonexceptional middle school students consistently rank good grades and free-time privileges as their most preferred forms of classroom rewards.

Despite the apparent benefits of utilizing extrinsic motivators, Stockdale and Williams also caution against the uncritical use of extrinsic reinforcement. They note that the major criticism that has been leveled against the use of extrinsic reinforcement is that it undermines the intrinsic reinforcement potential of the rewarded behavior. Nevertheless, referring to the work of Cialdini, the authors do not believe that the artificial choice of solely utilizing extrinsic or intrinsic reinforcement must be made. All reinforcement must have its primary emphasis on promoting the value on what the students are actually learning in the classroom. The extrinsic rewards used to promote academic performance should simultaneously anchor quality of performance in intrinsic motivation. Therefore, either before or after a student performance of a desired activity, where rewards are promised or given, the teacher must verbally communicate the importance of the activity or skill to the student. The importance of adding an intrinsic, causal explanation for completing tasks successfully will likely solidify and extend performance gains that are achieved through extrinsic rewards.

Data Collection and Results

Data Collection

I collected data for this project in several different ways. However, before I began to collect data and implement my reward system, I first explained to my Spanish 1 class what this project was about and how the data was going to be used anonymously. The

students seemed to be very excited about being involved in a research project and for the opportunity for their class to receive rewards. They were also very excited about being the only class to participate in the research project, and that my other students, in Spanish II, mostly juniors and seniors, were not participating in the program. At the high school, there has been a long tradition of class competitiveness and competition. Every year, the school reserves several school days throughout the year where classes compete against each other in intramural and field day types of activities. Thus, this program was initially met with a great deal of enthusiasm.

The next task that I needed to complete was to create and decorate a graphic organizer that would display the class rewards and show student progress. I placed it on the wall in the back corner of my room where all of my students could view it from their seats. I also began to keep a weekly record of anecdotal observations about how my class was doing, student enthusiasm for the reward system, key observations, and any changes that were taking place in the class. I continued to make weekly entries on the process throughout the semester and used this resource to track my class progress (pictures of graphic organizer, research notebook copies, and anecdotal notes).

I created a student contract that outlined my expectations and the students' responsibilities of what they would have to do to achieve their daily stamps. We reviewed the document together and talked about why it was important for every student to participate in class and complete their daily assignments. I fielded any questions that the students asked about the reward rules and had the students individually sign their contracts. Later that week, the class began the incentive program and the class earned

their stamps for both Thursday and Friday. The incentive system started out well, and, on Friday, I placed the class stamps on the graphic organizer.

During the following week, I administered a questionnaire that I created to discover how the class felt about the reward system and some of the changes I had made to increase class participation. The majority of the class seemed to enjoy participating in the reward system, but I was having a problem with four or five students that would not turn in their work on time or were consistently absent from class. One of the key things I discovered this week was that one of the most challenging issues in using a whole group reward system is creating accommodations that will not allow the poor efforts of a few students to jeopardize the good actions of the larger group.

At the conclusion of formal participation in the reward system, I gave my students an anonymous numeric questionnaire to discern their feelings about how well the reward system had worked and to answer some key questions that I had about the overall process. I had to offer double stamp days to ensure that my class would be able to attend the Spanish field trip with the rest of my Spanish students. I collected the daily grades. I organized all of the data I had gathered in my action research notebook, and I printed my weekly notes that I had taken during the course of the incentive program.

Project Results

The basis of my reward system was a set of student expectations and guidelines that the entire class would have to meet in order to receive their daily stamps. I would place the stamps on the graphic organizer every day, or every 2 to 3 days, depending on my class's progress. On Fridays, I communicated verbally to the class what our week had been like, and drew student attention to the graphic organizer in the back of the room. I

based my determination as to whether the class received their daily stamps on the students that were present in the class. Absentee students did not affect the daily outcome. For the students to receive a daily estampa (stamp), the following requirements would have to be met, as outlined in the student contract I created:

1. All students that are present and accounted for complete their class work successfully.
2. There are no significant discipline problems or student write-ups, and students do not continue to talk when the teacher is instructing the students in whole group instruction.
3. All students must participate, to the best of their abilities, in review activities and games.
4. The student will receive one verbal warning for academic or behavioral problems. After being verbally warned, the student will cost the class their daily credit by continuing such behavior.

I administered the first questionnaire during the 3rd week of our incentive program to see how well the students thought the class was doing, as a whole. I was also interested to have answers to some key questions and concerns that I had about the incentive program, and to discover how well certain accommodations I made were working. The questionnaire was based on six questions. The first question I asked my students to respond to was, “Do you feel the incentive system has helped your entire class to participate better in class?” I had a total of 26 students present in the classroom that day and received various responses on this and the other questions. I received a total of

18 positive responses about the program, 4 ambivalent responses, and 4 negative responses.

In my second question, I asked the students to explain any problems they had with the incentive program or to list reasons why they felt it was not working. I received 17 responses of “no problem,” blank responses, or positive comments. I also received four responses that expressed feelings of disappointment because the class had not received a reward yet for their efforts. One student felt that the program would begin to work better over time. Another student felt that the poor efforts of some students were jeopardizing the good efforts of the majority of the students in class. One response indicated that the class had a problem with listening and completing assignments, and that the reward system was exacerbating these problems. Another student believed the program was not motivational enough, and that the teacher was not pushing unmotivated students hard enough to complete their assignments. Another response indicated that, since the implementation of the reward system, the class was required to do more work, and that this extra workload was causing some students to not complete their assignments.

In my third question, I asked the student to state their opinion regarding the recent practice of listing student names on the board for incomplete or missed assignments, and asked if this practice should be continued. I was surprised by the results of this question. Twenty-two of the students, out of 26, believed that it was a good practice and should be continued to be used in class. Within the number of positive responses, 10 students commented that this practice was good because it motivated students to do their work and was an important tool to use if someone was absent from class. There were only four negative responses to this question, and one student felt that it should be discontinued

without explaining their thoughts or reasons for it. Another student felt that this practice unfairly singled out students and made them feel stupid. Two students believed that it was the student's personal business whether or not they completed their work.

The fourth question assessed individual student opinion about their class' progress, with regard to the reward system. It also asked the students to generalize how well their class was progressing or if students were not paying attention to the reward system. On this question, I received nine positive responses and that the reward system was helping them and their class to better participate. Twelve students felt that the reward system was okay, and that it was helping the students that complete their assignments and try in class. Five students felt that the reward system was not helping the class, as a whole, and that the class was not really paying attention to it.

The fifth question asked the students to assign a numeric value between 1 and 10 about how valuable the reward system had been for the class. In answering this question, the students were provided with the information that the score of 10 was the highest value while 1 represented the lowest score. The breadth of responses on this question ranged from 10 to 2. The mean for the class was 6.95, which I have rounded to 7.0. This numeric average demonstrates that the students, as a group, believe that the reward system is only of average importance and value.

In the final question, I asked the students how they felt about the current practice of placing the stamps on the graphic organizer. I wanted to know if the students felt that a particular day during the week should be set aside to place the stamps on our graphic organizer and if this practice would help to motivate students to complete their work who are currently not competing their assignments. Twenty students responded that they

believed that having a particular day to place stamps on the graphic organizer would be beneficial to student motivation and a good idea. Ten of the positive responses also felt that Friday would be the best day to do this. Two students were ambivalent about their answers and thought that it might be helpful in motivating students to complete their assignments. Four students responded negatively about this practice, and expressed that a specific day for placing stamps was unimportant and that it would have no bearing on student motivation.

In administering the second questionnaire during the last week of our incentive program, I roughly followed the question form from the initial questionnaire. However, I also sought to modify the questions to reflect concluding queries that I had about the incentive program we used in class. The results were somewhat mixed, but I believe that this type of data is important to action research because it allows one to adjust the program for future use and discern what actions have yielded results and what actions have not. The first question that I asked the students to respond to was, “Do you feel like the incentive system has helped your class as a whole to participate better in class?” I had a total of 25 students present in class that day and received 18 positive comments that the incentive system had helped the students to participate better in class. Conversely, I received seven negative comments that the incentive system had not helped the students to participate better in the class.

For my follow up question, I asked my students to outline any criticisms they had about why the incentive system did not work or any problems that they had with it. Twelve students answered that they thought it was unfair that the poor efforts of a few students could cost the class their daily stamp. I believe that this data shows that nearly

half of the students would have preferred an individually-based reward system rather than whole-group rewards. In addition, I received seven responses that indicated that students felt that it was their personal business whether they completed their daily work or not. I also received six responses that were blank or reported that they had no problems with the particular way that the incentive system was administered.

In my third question, I asked the students what their opinion was regarding the practice of listing the students name on the board that failed to complete their work or were absent from class. I additionally asked the students to decide whether this practice should be continued or discontinued. Fifteen students answered that this was a good practice because it provided students with the knowledge that they had missed assignments, and gave them a chance to finish their work. This group also advocated that the practice should be continued in class. Six students responded that they felt that this practice unfairly singled out students who did not complete their assignments, and that it should be discontinued. Four students answered that they thought that listing student names on the board was ineffective because the majority of the students it affected did not care, and that this practice did not affect them because they always completed their assignments. This group also indicated that it did not matter whether this practice was continued or discontinued in class.

The fourth question asked the students, “In your opinion how did your class do in regards to the reward system? Did your class progress well or did they not really pay attention to it?” Sixteen students commented that the class had participated well in the reward system and had paid attention to it. Five students commented that they thought that the class had participated “okay,” and that the students who cared participated well

and the students that did not care did not really participate in the program. Three students felt that the class had not progressed well with the reward system, and that the class, overall, did not pay attention to it. One student left the question blank.

In the fifth question, the students were asked to give a numeric value from 1 to 10 about how valuable the reward system was and how well it worked for the class. The breadth of numeric responses I received was surprising, and ranged from 1, the lowest, to 9.5, the highest. I arrived at the class average by dividing the total numeric value for this question by the total number of responses I received. The class mean for this question was 7.564, which I rounded up to 7.6. Although this value is somewhat higher than the score of 7.0 on the same question on the initial questionnaire, it points to a lukewarm response to the effectiveness of the reward system and student support of this intervention.

In the final question, the students were asked, “Do you have any recommendations for how the reward system should be utilized in the future? Do you feel your classmates helped to positively peer pressure students that were struggling to complete their assignments and daily work?” Thirteen students indicated that they did not have any recommendations for how the reward system should be used in the future, and that some students had tried to encourage other students to complete their work. Four students commented that the reward system needed to be more motivational, and be a bigger “deal” in class. They also felt that some students tried at the beginning of the program, and sporadically, to motivate students to finish their class work. Three students indicated that the reward system should be dropped because it did not work, and that it was the individual student’s choice and grade to complete assignments or not. Five

students responded that the rewards needed to be easier to get, or administered more quickly to help motivate students. This group of responders also felt that it was the teacher's position to pressure students to complete their assignments.

Along with the two questionnaires that I used to gather data about this project, I also made weekly notes and observations that I recorded on my class computer. I used this resource to help me track class progress or problems that I observed during the course of the incentive program. In the following sections, I have summarized key observations and problems that I detected within the program. Basically, in the first week of the program, I verbally explained the purpose, requirements, and goals for this project to my students. I also passed out the student and parental consent forms and gave the students a week to return them to me. The class was really excited that they were the only class that was participating in the reward program, and student motivation appeared to be very high.

During the second week, I created, explained, and administered the student contract for our class reward system, and collected all forms in my action research notebook. I observed that student enthusiasm was still high about participating in a reward program, but also noticed that a small group of reluctant learners, four to five students, were turning their assignments in late on a daily basis. I typically allow my students to work collaboratively on their class work, and hope that this will encourage my reluctant learners to complete their tasks in a timely fashion. During the following week, I began listing the names of students on the board that had missed class or failed to complete their assignments. It does not seem that positive reinforcement is enough to motivate every student, and that negative reinforcement must also be utilized. I also

administered and collected the data from my first questionnaire, and the students largely approve of this new practice.

In week 4, I was forced to make some concessions about how the reward system was being implemented in class. I provided extra class and homework time to complete assignments for students that were struggling to finish their daily assignments. I also pulled several students aside for private conversations to discern why they were not completing assignments and to provide additional motivation. This intervention helped to increase the daily percentage of class work, but I could see that student apathy would be a likely problem during the rest of the semester. During week 5, our school was closed for spring break. During week 6, the students returned from spring break, unruly and unfocused. I continued to have problems with my most reluctant learners completing their daily tasks, despite the fact that I continued to place student names on the board that had failed to complete assignments. The class, as a whole, seemed to have lost some interest in the reward system.

The students received their first reward, a class work/homework pass, for their progress on the reward system this week, week 7. This seemed to have re-energized the students about the reward system. I also began to have students stay after class for 5 minutes if they failed to complete their assignments or continued to play around in class. This intervention seemed to work, and the number of students that had to stay after class decreased. Once again, I witnessed that positive reinforcement, by itself, is not enough to ensure success, and that negative reinforcement can succeed. The students participated well during week 8, and received a double stamp for their outstanding scores on their vocabulary tests. However, with all of the extracurricular activities that were going on in

our school, and the prom to be held that weekend, it made it very difficult for the students to focus and stay on task.

The students, as a whole, came into class fairly unfocused on Monday of week 9, because of the prom, and the student intramurals still presented an ongoing distraction for the students. However, the students seemed to be excited and re-energized about the reward system because they had earned enough credits to watch a movie in class on Friday. I also observed that the number of students that had to stay after class to continue working on their daily assignments had decreased because almost every student had begun to finish their work in class. I think that this intervention was effective, but it probably works best when used infrequently. During week 10, the students received all of their daily stamps and worked really hard in class. Student intramurals ended on Friday, and, consequently, the students' focus in this class was much better this week. In addition, the students seemed to be really excited about the upcoming fiesta day, which was part of our reward system. It also appeared that, because of my students' strong efforts this week, they were on target to have the fiesta day coincide with our student projects on Cinco De Mayo.

During the following week, week 11, the students worked poorly on Monday and Tuesday. I had to call the class down several times for being too noisy and unfocused. I had several students stay after class on both of these days for not completing their work and continuously playing around. However, on Wednesday and Thursday, the class turned around their efforts and earned enough stamps to ensure that we would have our fiesta day on Friday. The students did extremely well in presenting their projects and in participating well in the cultural games and activities I designed for our fiesta day.

During week 12, the students began the week very hyperactive and unmotivated. I had to verbally warn several students about their disruptive talking, and patrol the room continuously to ensure that my students were on task. In an effort to increase student motivation, I offered double stamp days to ensure that the class would be able to participate in the upcoming Spanish field trip. I was somewhat dubious about granting double stamp days and taking this class on the field trip, but believed that it would punish the majority of the students who worked hard this semester to complete the reward system if I did not allow those students who were causing trouble to redeem themselves. During this week, I also administered my final questionnaire to discern student perspective on the effectiveness of the reward system.

Rationale of How Daily Class Work Grades Reflect Weekly Class Participation

In an effort to determine the total level of daily class participation for this study, in both the pre- and post-intervention stages, I have elected to focus on the number of students that failed to receive a score of 100 on their daily class work assignments. I have a total of 28 students on my class roster, and they know that I grade their daily assignments on the basis of fully completing the assignment, and promptly turning in work before leaving the classroom. If the students meet these requirements, then they will receive a daily grade of 100; if they fail to complete any of the exercises that are assigned, then I deduct points based on percentages of the amount of work they have completed (95, 90, 85, 80, 70 75, 65, 60, 55, 50, etc.).

To extrapolate the information from the daily student grades I have gathered, I subtract the number of incomplete grades, a grade less than 100, from the total number of possible grades available. Next, I divide the total number of complete grades by the

number of total possible grades to ascertain the class' weekly percentage. After calculating the class percentage, I either round the figure up or down to the next whole number. I have chosen to use this method because it can accurately reflect the class percentage for fully completing assignments, despite the fact that some of our weeks are longer or shorter due to holidays, breaks, class assignments, special project days, and school events.

Classroom Praxis

In terms of my classroom praxis and procedures, I always provide a model response for each exercise that we are about to cover on the board. Next, I make my expertise available to the students by walking around the classroom and answering any questions, or by tutoring students individually or in collaborative groups. After assisting the students with their work, the class reviews the previous day's assignments together orally by using whole group instruction and student participation. In addition, I grade all daily class work assignments on the same day, return student work from the previous day at the beginning of the next class, and then we review the previous day's class work together. I believe that this process helps to reinforce the important conjugations and grammatical concepts that we cover in class, and provides the students with an opportunity to asks questions or receive additional explanations about the material we are covering. I also reward the daily efforts of my students by making the daily class work component worth 20 percent of their total grade in my class. Essentially, a student is provided with the opportunity to pass my class if they will complete their daily assignments, score a 70 or higher on all tests and quizzes, and complete their student

projects in a timely fashion. A summary of weekly work completion is presented in Figures 1 and 2.

Average of Weekly Class Completion of Daily Assignments

Pre-Intervention		Post-Intervention	
Week 1 January 5	100%	Week 1 March 1-2	100%
Week 2 January 8 -12	97%	Week 2 March 5-8	88%
Week 3 January 16 – 19	96%	Week 3 March 12-15	90%
Week 4 January 22 – 26	73%	Week 4 March 26-29	87%
Week 5 January 29 – 30	50 %	Week 5 April 2-5	94%
Week 6 February 5 – 9	81%	Week 6 April 9-13	91%
Week 7 February 12 -16	94%	Week 7 April 16-19	84%
Week 8 February 20 – 22	92%	Week 8 April 23-26	93%
Week 9 February 26 – 28	79%	Week 9 April 30- May 3	70%
Pre-Intervention Averages	85%	Week 10 May 7-11	89%
		Post-Intervention Averages	89%

Figure 1. A comparison of weekly work completion for pre-intervention and post-intervention is presented.

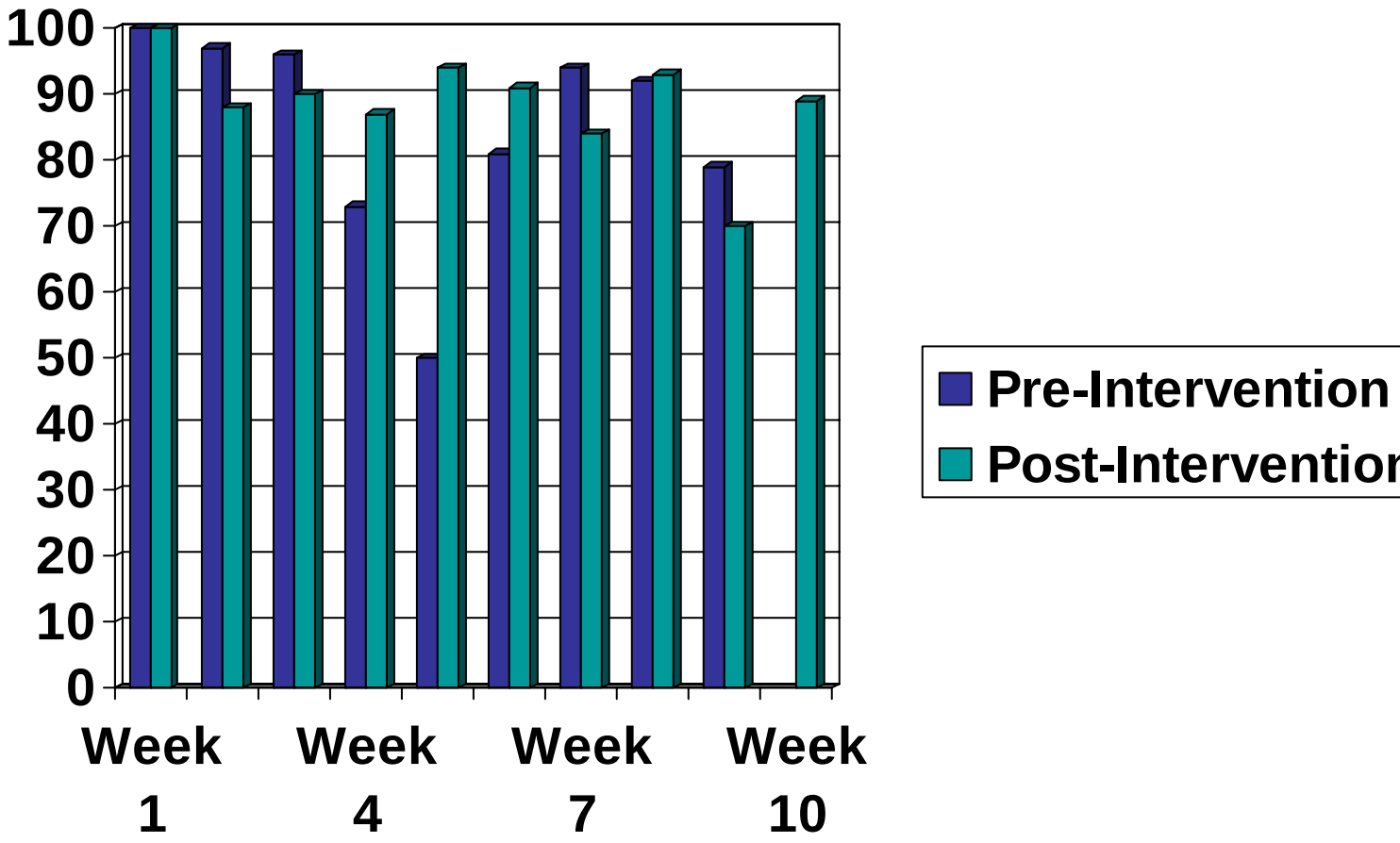

Figure 2. A graphical representation of weekly work completed is presented.

Conclusions and Recommendations

Throughout the writing process, and in collating the data, I have discovered several key generalizations that can be drawn from the results of my case study. One of the initial things that I found frustrating about doing research on extrinsic reinforcement is the amount of time, energy, and resources that surround the question of whether extrinsic or intrinsic reinforcement is better or worse. It appears that the majority of scholarly research largely revolves around this issue and the detrimental findings of opting for one particular vehicle of motivation or the other. In terms of classroom practice, this appears to be an artificial choice and option. Every classroom, school district, and business, and our own capitalist economy seem to reflect the use of both extrinsic and intrinsic motivation. In general, people seem to be motivated by tangible rewards, as well as the sense of pride and accomplishment that performing a particular activity or skill provides for them. If this is true for our larger society, then I believe that both extrinsic and intrinsic reinforcement should be utilized in our educational settings and classrooms. In reality, extrinsic and intrinsic motivators are already present in these settings, and it is largely up to the students, parents, teachers, administrators, and school board members to discover creative ways to harness this potential and accomplish positive outcomes.

In terms of the type of scholarly research on extrinsic reinforcement, there seems to be a perceived deficiency or disconnect between the aims of professional researchers and the needs of classroom teachers. While there is a plethora of educational and psychological theory and research on particular models to explain human and student behavior, there is also a lack of concrete research on effective strategies that will work in

the classroom to promote student performance and academic achievement. I have found that this is particularly true with regard to extrinsic motivation and reward systems. However, the Internet and many educational publications readily provide easy access to tips on implementing reward systems and increasing student motivation. Unfortunately, these resources and teaching tips are largely informal and non-researched-based strategies.

Another troubling phenomenon that I discovered through the use of a reward system was the different ways that my students and I perceived rewards. I had the students provide input and vote on the rewards that would be used in our reward system, and was surprised to see how excited the students were about receiving a class work/homework pass as opposed to a movie day. I believe that the students' excitement over individual rewards, as opposed to whole group awards, may be explained by the heightened sense of individualism that Americans hold and cherish, or that it was a popular reward because it could be used at the student's volition and under their control. Whatever the case may be, it demonstrated to me the importance of discovering and utilizing rewards that the students think are actually rewarding to any extrinsic reward system, and that reward choice is integral to the success of the program.

Another interesting and puzzling phenomenon that I observed throughout the course of the incentive program was that the majority of my students cooperated and participated well in the program, but that there was a core group of four to five students who would jeopardize class success on a daily basis. In an effort to minimize the negative effects that my unmotivated students had on whole group success, I was forced to create and implement different accommodations. I began by providing some of my more

unmotivated students with extra class work time or homework time to complete their assignments. When this strategy began to fail, I began to place student names on the board and give students until the end of the week to finish their assignments. When this strategy became redundant, or seemed to become highly ineffective, I would try a different intervention technique. I would hold the students after class, who had failed to complete their assignments, for 5 minutes, so that they could continue to work on their daily class work. The logic for using this approach stemmed from my belief that, if you waste your time in class then you don't get to enjoy your 10-minute hall break and social time.

Although some researchers and educational experts would warn against the use of negative reinforcement, I have personally witnessed that these techniques can produce positive outcomes. I also find it peculiar that the term, negative reinforcement, is so largely understood to be a pejorative concept in the field of education, despite the fact that the outcomes of this type of reinforcement can yield positive results. I believe that, at the heart of this debate, is the notion that in the past educators relied almost exclusively on negative reinforcement to produce desired outcomes or to affect student behavior. Indeed, the sole use of negative reinforcement can be detrimental to the student and produce negative outcomes. However, I believe that it is important to utilize several different strategies and techniques, and both positive and negative reinforcement, to improve student motivation and behaviors.

Despite being convinced of the benefits of primarily utilizing positive reinforcement techniques and using a reward system that was almost entirely based on positive reinforcement, I found it necessary to utilize some negative reinforcers and

consequences to produce positive outcomes. I particularly believe that this was helpful in motivating my most reluctant learners, either because positive rewards were not that appealing to them or that they generally did not care about the success of the class. That having been said, I believe that the techniques of negative reinforcers should be used sparingly and in conjunction with techniques of positive reinforcement. In my experience, the combination of positive and negative reinforcement produced the best results and the greatest number of positive outcomes for the student.

Consensus of Professional Organization

As a member of TEA, I decided to contact my local regional representative to discover what TEA's official position was on classroom management, and the use of incentive and reward programs. Unfortunately, the representative responded that the TEA Web site did not have many resources on these topics, but that NEA did. An article from the NEA Web site, www.nea.org., entitled, *A Primer on Classroom Discipline: Principles Old and New*, by Thomas R. McDaniel, summarizes NEA's position. In essence, the article argues that positive reinforcement is the most effective strategy for classroom management because it reinforces desirable behaviors and produces better overall results, in the long run. Additionally, McDaniel cautions against the use of punishment as a strategy because it only works temporarily, and may, actually, increase the number of negative behaviors because the teacher has called attention to them. McDaniel goes on to list some of the more effective strategies in using positive reinforcement. The author lists verbal praise, establishing positive rules and students expectations, nonverbal reinforcers, activity reinforcers, and concrete and token

reinforcers as being the best techniques for establishing good class room discipline and for promoting positive student outcomes.

Applicability of Incentive Programs for Professional Development

Through the course of my research, involvement with professional development, and in informal dialogues with classroom teachers, I have discovered that student motivation and classroom management are two of the areas in which professional educators consistently express the most interest. I believe that professional educators' interest in student motivation is partially fueled by the current educational environment of high-stakes testing and accountability. In addition, teachers are not only interested in motivating their students to succeed on standardized tests, but in managing their classrooms and student behavior effectively. Sadly, many of the professional activities and in-service seminars in which I and other teachers have participated have not increased our knowledge of how to effectively use motivational and behavioral strategies that will work in our respective classrooms.

What professional educators need is the concrete and practical skills of research-based strategies that will help them to become better teachers and classroom administrators. From my own experience, I have witnessed the benefits of using extrinsic reinforcement coupled with a marginal use of negative reinforcement, and the positive student outcomes produced. However, this technique is only one of many techniques that are applicable, and may not be effective for other teachers and learning environments. Thus, I believe that professional development should largely be devoted to educating and practicing concrete and researched-based strategies which are easily transferred to classroom praxis. I think that this type of professional development would be applicable

to all mastery levels of teachers, and would increase the effectiveness of every participant. This level of applicability and usefulness may eliminate or reduce the level of teacher resistance and negative attitudes that surround many of our in-service activities and professional development opportunities.

I am sure that there are opportunities and funds available for research on the effectiveness of reward systems or incentive programs from the federal, state, and local levels, and in the business sector. However, I have been unable to locate specific grants, foundations, or endowments that would support this effort by searching the internet. Nevertheless, I am aware of a particular grant of which the high school and county, in general, make routine use. This grant is geared towards assisting rural teachers across the state of Tennessee in the language arts and in technology. Several teachers from my school have received support from this grant to attend workshops and professional development opportunities, and to increase the number of computers available in our computer lab. One of the faculty members at our school, the librarian, is a virtual expert on applying for a receiving this type of assistance.

Technology could have been used to design and implement the reward system that I elected to use in my classroom. One task that the students could have undertaken would have been to decorate and create the classroom graphic organizer. The students would use the school computer lab and the Internet to discover various charts and graphics that would have been applicable to the project. In addition, I could have created a classroom Web page that included a copy of our graphic organizer which charted class progress. The students could also have been responsible for breaking down their class progress into collaborative groups quarterly, and posting their findings on our graphic organizer. I may

also have designed a lesson that taught my students to use the Excel application of Windows to create charts and graphs that summarized class progress and efforts for the entire semester. If I choose to use an incentive program in the future, I will also create an active role for technology and design activities and lessons that have technological components. I believe that the active use of technology could have given my students a greater sense of ownership in the project, promoted parental engagement, and been a medium for student creativity and invention.

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The Classroom Physical Environment

John Shoemate

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The University of Tennessee at Chattanooga

The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149) has approved this research project 08-059.

Introduction to the Problem

While thinking about what makes students successful academically, I am drawn toward the environment that I am surrounded in as I write this very sentence. With student success on standardized tests at an all time high, no stone has been left unturned. Much attention is given to the classroom environment. The classroom environment should be warm, friendly, and encouraging. The classroom should not have a trace of isolation, fear, or intimidation. As important as the strategy used to present the material is the physical environment in which students learn. Looking no further than Maslow's Hierarchy of Needs, educators know that, if students' most basic needs are not obtained, then higher order thinking cannot be reached. If students in the classroom are distracted due to their physical environment, then they are less likely to be learning the material presented in the lesson. The physical layout of a classroom can affect the learning environment. Educators have to be prepared to shape classrooms that are flexibile and adaptable. Teachers of today are taking nothing for granted. Lighting, use of colors, bulletin boards, intergrating technology, and furniture work hand-in-hand with the daily lesson. Teachers are concerned for the students to receive the best education possible. With the increase in diagnoses of Attention Deficit Disorder, teachers need to have a calming, attention-focusing classroom, now more than ever. Teachers of today are armed with the knowledge that not all students learn in the same way, or should be expected to learn in the same way. Material should be presented in multiple activities with various learning styles and strategies. The classroom needs to be physically equipped to meet the high demands required to teach the lesson using multiple activities, learning styles, and strategies. Teachers need the freedom to explore various options inside their classrooms

concerning the physical aspects of teaching. Classrooms should make use of both natural and electric lighting. Classrooms leading the charge are introducing both large windows and skylights. The importance of furniture in meeting the needs of the students is increasing. Students should have appropriately-sized desks and tables to prevent undue strain and fatigue. Ergonomically correct desks, chairs, pens, and keyboards are slowly making the transition from the business world to the classroom. The demand for technology in the classroom has never been higher. The goal for each classroom is to have at least one computer accessible for the students. The classroom should also be able to meet the needs of all inclusion students. These demands are challenging, and, often, unobtainable for some classrooms. Equally important is consideration of the use of seating charts and seating location for students to be academically successful in the classroom. Students that are unable to see or hear the lesson clearly from their position in the classroom are at a disadvantage. Students can fall into rapacious lulls due to stale seating charts and arrangements. Seating charts provide teachers additional structure for classroom management, but should be changed throughout the course of the grading period. Seating arrangements are a great tool to allow teachers to integrate various strategies and collaborative assignments. Keeping seating charts and seating arrangements current and adaptive allows for the natural flow of the classroom to exist. Seating charts and arrangements give teachers the structure needed to maintain a disciplined classroom, along with adaptive skills for students to adjust to ever-changing group and individual responsibilities. With attention to these details, classroom teachers will be able to better manage the daily events in the classroom, and increase the academic success of the students they teach.

Classroom Environment

My study of interest is the classroom environment. How can the classroom layout affect the learning environment? When tackling this issue, one of the questions to answer is in what style environment do students learn and perform the best? Do students perform the best in a strict, military-style environment, where they and their classmates are lined-up, sitting one behind another? Do students perform best in an environment that is isolated, such as a cubical? Do students perform their best when they are uncomfortable with furniture, or when the lighting is bad, or when the room temperature is too harsh? Are students academically successful if they are positioned in the class too far from the board or the teacher? I suspect that most students do not perform their best when these details are not taken into consideration. How can students be expected to perform to their optimal level when many of these issues are not taken into consideration? We have all been in classrooms that were very conducive to learning, and other rooms that were not. What is the big difference? I am interested to learn how color, lighting, furniture, classroom layout, seating arrangements, proximity to the teacher, and temperate affect the learning process. In conducting this research, I can neither control the mood nor attitude of the teachers or the students, nor can I decide the willingness of the students to adhere to the lessons. I do hope to better understand how successful teachers are able to capture the minds of students through the use of the classroom environment. I am interested to learn what the recent accommodations are to ensure success for all students. How do successful, experienced, proven teachers meet the needs of individuals through the use of color, lighting, temperature, technology, furniture, seating arrangement, and location of teaching position to ensure academic success for the students? Does seating arrangement

affect the pass-fail rate of the students? Does the location of the teacher's desk, and primary location of the teacher, factor into the academic success of the students? Certain aspects that are not tied directly to the lesson have a large effect on the efficiency of learning. This is an opportunity to learn more about teaching than what is printed in the teacher's edition of a book. I am interested in the students' perception the moment they enter the classroom. I want to know what the students perceive to be a warm, friendly, comfortable environment. I want to see how these details affect the willingness of the students to strive to produce their best work. Teachers that account for the physical environment of their classrooms probably have higher success rates with students being extrinsically motivated. I am interested to learn from other teachers the different learning styles, various strategies, and seating arrangements that have and have not been successful for them over the course of their careers.

Review of Literature

Students' academic success is the core concern of teachers. Teachers would like for their students to be comfortable, physically and mentally. The physical classroom plays a large part in the comfort of the students. Classrooms have certainly changed over the course of history. The importance of lighting, furniture, technology, seating arrangements, and overall classroom design has become more prevalent. At the turn of the 20th century, educators were using the Lancastrian system, using bleacher-style seating and sloped floors to aid the teacher's supervision of the classroom. By the 1920s, however, today's standard, rectangular classrooms had become almost universal (Butin, 2000, p. 2). But today's modern classroom is changing quickly. Teachers today are more flexible with the seating styles used in the classrooms. Teachers must be flexible with the

increase of attention placed on the importance of cooperative and collaborative learning. Students learn best when they are actively involved with the learning process. Students should be engaged in the activities, not just receive lectures and read text about activities. A large problem with today's schools is that the standard classroom does not meet the needs of modern educational expectations. Most school buildings are pre-OPEC, they're before energy conservation, they're pre-ADA, they're pre-technology, and they're pre-current programs and services (Butterfield, 1999, p. 3). Classrooms of today must accommodate a wide range of activities. The need to accommodate diverse options places a premium on the flexibility and adaptability of the classroom (Butin, 2000, p. 2). The design of each classroom should allow for the teachers and students to flow through the lessons with smooth transitions. Students learn and master skills on different levels and speeds. Research shows that students learn best in stimulating, safe, and resource-rich learning environments (Lackney, 1998). Classrooms should have complementary colors, textures, and patterns (Butin, 2000 p. 4). As important as it is for the teacher to display flexibility and adaptability, so too is the importance of the physical classroom. The more flexible the classroom design, the better it is. A classroom must be able to accommodate the changes in technology and teaching strategies to come. Movable furniture, storage spaces, multiple electrical outlets, and adjustable lighting systems are just some factors to consider (Butin, 2000, p. 4). It is important for the teacher not to rely on the ideas of yesterday. Teachers need to think of their classrooms more as a working lab, a living space, or an interactive museum.

The design of a classroom should have a length-to-width ratio no greater than three-to-two. Ceiling heights should be a minimum of 9 feet, but, preferably, 10 feet or

more. Classrooms must be able to accommodate seating arrangements as varied as rows, small group clusters, or U-shapes. It is important that partitions and furniture should not block the students' view (Butin, 2000, p. 3). The size of the room, along with the furniture, needs to be able to accommodate the multiple demands required to educate students. Depending on the grade level and local policies and building codes, the size of classroom can range from 750 to 1200 square feet (Minnesota Department of Children, Families, and Learning, 1997), with a minimum of 15 percent more square feet per classroom for expanded technology needs, project-centered curriculum, and inclusion of special needs students. Currently, nearly seven million students, ages 6 through 21, have been identified through IDEA as requiring special instruction (Adams, 2006, p. 41-46). That is, approximately 12 out of every 100 students in school must be provided with special services to address their disabling condition in a way that allows them to be socially, emotionally, and physically a part of the school, as a whole (Stevenson, 2007, p. 5). The student's desk is often considered the most important piece of furniture in the classroom. Students' desks must allow for freedom of exploration in the classroom. The desks need to allow students to work individually, rearrange for collaborative assignments, and rearrange for distinct seating arrangements. Elementary classrooms have always had desks in them, but, over the years, the rows of identical desks bolted to the floor have given way to more flexible configurations over which teachers have gained considerable control. How to arrange the seating in a classroom, and to what ends, are questions that many teachers now answer for themselves. The decision is dictated by teachers' conceptions of their role, the conditions for learning, and the appropriate means for maintaining classroom control (Rosenfield, Lambert, & Black, 1985, p. 3). Most

classroom chairs are nonadjustable and research shows that individuals cannot sit still and concentrate for more than 50 minutes in non-cushioned chairs (Bullock and Foster-Harrison, 1997, p. 39). Ergonomically-designed furniture should be used in the classroom, as much as possible. Students come in various shapes and sizes, even in students who are the same age and grade level. As different as every student is, teachers must adapt and make their classrooms meet the needs of all of the students. Left too long in uncomfortable seats, the students will lose their concentration, and a learning opportunity has been wasted. “Classrooms are out! Don’t build them,” argues Schank, of Northwestern University’s Institute for Learning Sciences. “We should spend about 1/3 of our day at the computer, 1/3 talking with others, and 1/3 making something (Butterfield, 1999, p. 3). The classroom needs to be much more than just desks and a white board. Teachers need to use various strategies while teaching. Large groups of desks facilitate social interaction. Barriers serving as boundaries for work and study areas impede irrelevant verbal and visual exchanges, and rugs in the classroom encourage informal interactions (Zifferblatt, 1972, p. 55). Lighting and coloring play an equally important role in the dynamic of a classroom. These elements cause students’ eyes to draw toward or away from subject material. It is a natural reflex to look up from a task frequently, and refocus on an element in the distance. People often do this unconsciously. For example, among a group of people in a library or office, individuals look up and out often, with little apparent goal. In fact, they are resting their eyes, by changing the focal length, a form of stretching (Fielding, 2006, p. 2). As teachers realize the need for students to refocus, appropriate lighting and coloring can pull the student back to the lesson. Instinctively, we tend to move toward light and color (Fielding, 2006, p. 3).

Primary colors are not always the best color choices when designing a classroom. Experience has shown that children are wonderfully sensitive and responsive to nuances in both lighting and color (Fielding, 2006, p. 5). The research indicating that the color red incites aggression, green is calming, and yellow stimulates the intellect is outdated. Hundreds of schools, hospitals, and prisons were painted light green in the middle of the 20th century to be disbanded by the 1980s and 1990s (Fielding, 2006, p. 5). It is often assumed that natural light is difficult to control, but natural light is perhaps the single most important element in the learning environment. Research shows that in daylighted classrooms, math scores improve by 20 percent and verbal scores improve by 22 percent (Fielding, 2006, p. 6). Research has consistently shown that academic off-task behavior, absences, and depression all decrease with greater amounts of natural light. In North Carolina, the state board of education recommends that the area allocated for windows in elementary school classrooms be equivalent to at least eight percent of the total floor space. For middle schools and high schools, the recommendation is between six and eight percent (North Carolina State Board of Education 1998).

The physical environment that students learn in is highly influential. Students that learn in an environment with concern for room climate, lighting, coloring, classroom furniture, and other physical factors are more likely to focus on the lesson. A study based on student performance of Washington, DC school students discovered that better academic outcomes were associated with schools that had better physical environments (Berner, 1993, p. 6-29). A statewide study in Virginia linked school physical conditions to both achievement and student behavior (Earthman, Cash, & Berkum, 1995). Several studies have linked the basic health of both students and teachers to the school physical

environment in which they must learn and teach (Mendell & Heath, 2004). The environment that students and teachers are a part of becomes their everyday life. Students are more likely to be positive if they are surrounded by a positive environment. The growing number of studies linking student outcomes with the physical attributes of classrooms suggests that, if we are serious about optimizing student outcomes in American schools, those schools must be places whose physical environments support, not hinder, the educational process. The latest national analysis of the physical condition of American schools indicates that 75% of this nation's schools need to spend money on repairs, renovations, and modernizations to put the school's onsite buildings into good overall condition. On average, it is estimated that each school needing repairs requires $2.2 million dollars to bring it up to standards (National Center for Educational Statistics, 2000). The physical environment in which education is delivered must be given serious consideration as the federal government, the respective state, and local school systems seek educational accountability. If one school has modern, aesthetically-pleasing school facilities, while another struggles with undersized classrooms and a poor physical environment, the playing field is not level (Stevenson, 2006, p. 14). In a perfect world, every school would receive the funds to design the ideal classrooms. Unfortunately, we do not live in a perfect world. Teachers can be adaptive in their classroom arrangements with basically no cost. Desks or tables arranged in either u-shaped or split-half configurations can facilitate interaction between the teacher and the students, and among students, themselves. The results suggest that seating arrangement influences participation, thinking, and appropriate comments, which, in turn, can have a positive effect on learning (Ridling, 1994, p. 11). Various seating arrangements help to keep

students focused. Change in a controlled environment can freshen a stale classroom. Allowing students to use alternative seating arrangements for certain activities can increase student participation and classroom discussion, and improve class morale. Teachers in u-shaped and split-half seating arrangements were found to make significantly more frequent use of indirect teacher talk behaviors and student talk behaviors, than when in row seating. Teachers in the alternative seating arrangements (u-shaped and split-half) engaged in a significantly higher frequency of indirect teacher talk behaviors, such as asking questions and answering questions than when in row seating (Ridling, 1994, p. 4). Students perform their best in an environment that is consistently warm and inviting. As educators, it is our responsibility to ensure this environment. Teachers wear many hats in the classroom. Possibly most important is the role of leader and idealist. Keeping the classroom's physical environment creative is as equally important as keeping lesson plans and teaching strategies creative, lively, and inspiring.

Data Collection and Results

Population

The population of the study will be three, fifth-grade mathematics teachers and 25 randomly selected fifth-grade students. The students will be selected from the school listing of all fifth-grade students without regard to outlying factors such as homeroom teacher, race, family income, or academic status. The teachers selected for the study will continue to supply the same quality, curriculum-driven lessons to each of the students. The teachers will not know which students are selected for the study. This will ensure that all students will be treated equally, and without subconscious attention given to the students selected for the study. All of the students selected for the study are taught by

their respective teachers during the same time of day, each day, with the same curriculum standards to cover during the course of the study. The study will be conducted at a suburban elementary school in the Hamilton County school district.

Instructional Plan

The teachers selected for the study will complete a questionnaire related to the physical environment of each of their classrooms. Along with the formal written procedure, I will conduct informal, casual conversation with the three teachers to gain any additional insight or opinions related to the physical environment of their classrooms, seating arrangements, and the use of seating charts. Issues that will be covered include:

1) How do you determine seating charts and seating arrangements in your classroom?
2) How often do you change the seating chart and seating arrangement?
3) Where are the higher/lower performing students placed in the seating chart?
4) Where are the best/least disciplined students placed in the seating chart?
5) How do you determine student conduct grades?
6) With which seating arrangements have you had the worst experience, and why do you think those seating arrangement failed?
7) Which seating arrangement is best for all students' academic success in mathematics?

Once the teachers have completed their questionnaire, the students selected for the study will complete a survey. The survey will relate to the physical environment in which the students study mathematics, and the use of seating arrangements and seating charts in their mathematics classroom. The reliability is based on the questions answered by the

teachers. The validity will be supplied by the questions answered by the teachers and students concerning the content of the study. The focus is based on the conduct grade, midterm grade, final grade, seating arrangement, and seating chart for each of the students during the course of the study. Of the three teachers selected for the study, two teachers use traditional rows and columns, and one teacher uses pod or group seating. Each student will be assigned a letter in the alphabet to represent their name, along with conduct grade for the grading period, midterm grade, final grade, and location in the classroom in relation to the teacher and the board used during the lessons.

Time Commitment

The 25 students will attend daily mathematics classes taught by their respective teachers in three different classrooms. The students and teachers will be observed and questioned over the time span of a 9-week grading term. Each student will attend 50 minutes of mathematics daily over the course of the 9-week span in the classroom environment where conduct, midterm average, final average, and student-answered surveys will be used to analyze academic success, along with student attitudes concerning the physical classroom.

Results

The consensus from the three teachers participating in the study stated that the leading factors for use of, and variation in, their seating charts and seating arrangements was discipline. The teachers felt that, for them to maintain adequate classroom management, and provide the lesson equally to all students, they needed to use their current classroom seating arrangements. The teachers also matched answers when questioned about the placement of where to position the higher and lower performing

students. The teachers felt that the higher-performing students should be placed through out the classroom, typically further back. The lower-performing students should be positioned more towards the front of the room or on the end of a row. The same was true when questioned about the placement of the best- and least-disciplined students. It was very interesting to discover that the teachers all thought the best seating arrangement for learning mathematics was pod seating, even though only one teacher uses pod seating. The teachers of classrooms A and B listed an increase in classroom discipline problems and cheating as reasoning for not using pod seating. I asked the teacher of classroom C if increased discipline problems and cheating were factors in the classroom. The teacher stated that, “Using assertive discipline with equal consequences of both good and bad behavior eliminates the majority of discipline problems.” Concerning the issue of cheating, the teacher of classroom C said that, “Becoming actively involved and moving around the classroom along with adding supplemental help decreases the risk of cheating.”

Classroom Study

Of the 25 students, the largest pool of students was in Classroom A, with a teacher using traditional row and column seating. The students in classroom A were comprised of six girls and seven boys. These students remained in the same seating arrangement and seating chart for the duration of the study. Five of the 13 students were positioned in the front two rows of the class, with four out of the five students increasing their academic average from the midterm average to the final average. Six of the 13 students involved with the study were positioned in the middle section of the classroom (third and fourth rows). There was a slight drop in academic average from midterm grade

to final grade with four of the six students. The group average for these students in the middle section remained the same from the midterm average to the final average. Three of the thirteen students were positioned in the back section of the classroom (fifth and sixth rows). Two of the three students' averages dropped over the course of the study, and the group average from midterm to final dropped one point. Classroom B was comprised of five students in the study, three boys and two girls. Two of the five students were positioned in the front two rows of the classroom. The final average for one of the two students increased four points from midterm to final average, with the average over the term of the two students staying consistent from midterm to final average. One of the five students was positioned in the middle rows of the classroom. This student's average dropped three points from midterm to final average. Two of the five students were positioned in the back section of the classroom, with one student's average dropping three points from midterm to final average. From the midterm average to the final average of the students in back section of the classroom, the group average dropped one point. Classroom C was comprised of seven students involved with the study, five girls and two boys. Classroom C was unique in the study because, unlike the previous two classrooms, the teacher of Classroom C uses pod seating and varies the seating chart throughout the grading period. The midterm average for these students reflects their position in the first seating chart. From that point, the teacher changed the seating chart for all students in the class to have a new location for the remainder of the grading period. Two of the seven students selected for the study were located in the front pod leading up to the midterm average and moved to the middle pods for the remainder of the grading period. These students had a group average drop of three points from their midterm

average to their final average. One student seated in a middle pod moved to a different seat in the middle pod section when the seating chart changed, and that student's averaged dropped one point from midterm to final average. Two students started the grading period in the middle pods, and from the midterm, moved to the back pods. These students' combined averages dropped three points from midterm to final average. One student started the grading period and ended the grading period in the back pod section. This student's midterm to final average dropped two points. One of the seven students selected for the study started the grading period positioned in the back pod section, and when the seating arrangement changed, was positioned in the front pod. This student's average increased five points from the midterm grade to the final grade. (See Figures 1, 2, and 3.)

Classroom A

Traditional Rows and Columns

Student ID	Conduct	Midterm	Final	Location
A	S	94	97	F
B	S	96	94	M
C	S	94	95	M
D	S	94	98	B
E	S	96	95	F
F	S	97	97	M
G	S	84	88	M
H	S	95	94	M
I	S	91	93	B
J	S	72	77	F
K	S	92	88	B
L	S	90	88	M
M	S	91	93	F

Conduct: S Satisfactory

Location: F Front 1/2 Rows, M Middle 3/4 Rows, B Back 5/6/7 Rows

Total of Front Students: 4, Average Midterm Grade: 88, Average Final Grade: 91

Total of Middle Students: 6, Average Midterm Grade: 93, Average Final Grade: 93

Total of Back Students: 3, Average Midterm Grade: 93, Average Final Grade: 92

Figure 1. Classroom A.

Classroom B

Traditional Rows and Columns

Student ID	Conduct	Midterm	Final	Location
N	S	91	94	B
O	S	95	92	F
P	S	70	74	F
Q	S	95	92	M
R	S	98	99	B

Conduct: S Satisfactory

Location: F Front 1/2 Rows, M Middle 3/4 Rows, B Back 5/6/7 Rows

Total of Front Students: 2, Average Midterm Grade: 83, Average Final Grade: 83

Total of Middle Students: 1, Average Midterm Grade: 95, Average Final Grade: 92

Total of Back Students: 2, Average Midterm Grade: 96, Average Final Grade: 95

Figure 2. Classroom B.

Classroom C

Pod Seating, Students changed location

twice during grading period.

Student ID	Conduct	Midterm	Final	Location
S	S	95	94	M/M
T	S	92	88	M/B
U	S	89	87	B/B
V	S-	93	90	F/M
W	S	91	96	B/F
X	S	90	87	F/M
Y	S	97	96	M/B

Conduct: S Satisfactory, S- Needs slight improvement

Location: F Front Pod 1, M Middle Pods 2,3, B Back Pods 4,5

Front Students: 2, Average Midterm Grade: 92, Students moved to Middle section for the remainder of the course, Average Final 89.

Middle Students: 3, Average Midterm Grade: 95, One student stayed in the Middle section

and the other two moved to the Back section, Average Final 91.

Back Students: 2, Average Midterm Grade: 90, One student stayed in the back section and the other student moved to the Front section, Average Final 90. The student that stayed in the back section midterm grade was an 89 and their average dropped two points to a final grade of 87. The student that moved from the back section to the front section midterm grade was a 91 and their average increase five points to a final grade of 96. (Surveys and seating plans are contained in Appendices A-G.)

Figure 3. Classroom C.

Conclusion and Recommendations

The physical classroom has certainly come a long way from when schools were first started. We are on the ground floor of all the adaptations that will occur in the classrooms of tomorrow. Students today are reaping the benefits for the standard to have computers in the classroom. If educators 50 years ago would have been told that elementary students of today would visit computer labs, and writing to read labs, and have computers in the classroom, they would not have believed it. Education is rapidly and continuously changing. For that reason, educators also have to be willing to make changes in teaching strategies. There is no limit to what students can learn as long as

educators that see limitless potential to teach the students. The classroom is like an ocean, constantly moving, changing, adapting to the needs of the situation. Students learn best in classrooms that are capable of change. It is the job of educators to be able to make these changes to further teach all students. Students learn best when they are comfortable with their surroundings, and are challenged by difficult but obtainable goals. Through this study, I have learned that being a good educator often comes with alterations to plans. As sure as a teacher plans a lesson to unfold in one direction, the lesson will go in the opposite direction. Teaching is about building relationships with students, and unlocking previously unknown potential. Collaboration with the teachers involved in this study has provided me with insight far beyond my own. The students in this study did perform better academically when they were positioned closer to the teacher and the front board. Teachers teaching the same content standards taught students in three different classrooms, and, in each classroom, the students that were closer to the front of the room perform better academically. I would place all of my students in the first two rows or pods in my classroom. As impossible as that might seem, the future of the modern classroom is limited only by the imaginations of the students that occupy those desks. I envision adaptable seating that is more freely moveable and highly flexible. At the start of the informative session of the lesson, students could be positioned in two rows close to the teacher and the board. Then, when time to apply the lesson, the students could break off into various seating arrangements. I envision classrooms with video conferencing lessons, with students interacting with students of various cultures, collaborating on issues. The physical environment of the classroom will always adapt to meet the changing demands of students and teachers.

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Appendix A

Teacher Questionnaire
All Questions Relate Only to Classes You Teach Math Lessons

1. How many students do you teach?

2. Does the size of the classroom meet the needs of the students?

3. How do you determine seating charts, if you use seating charts? (discipline, alphabet, boy, girl, etc.)

4. How often do you change the seating chart?

5. Where are the higher performing students placed in the seating chart?

6. Where are the lower performing students placed in the seating chart?

7. Where are the best-disciplined students placed in the seating chart?

8. Where are the least disciplined students placed in the seating chart?

9. If you could change one thing (or more) about your classroom what would it be, and why?

10. What is your favorite aspect of your classroom?

11. Do you teach special needs students?

12. Are the needs of these students considered by the current construction of the classroom?

13. Would any changes to your classroom allow you more opportunity to teach these students?

14. Do you teach advanced students?

15. Are the needs of these students considered by the current construction of the classroom?

16. Would any changes to your classroom allow you more opportunity to teach these students?

17. What are some examples of technology incorporated with your classroom?

18. Does the structure of your classroom limit your use of technology?

19. Over the course of your teaching career how many different seating arrangements have you used in your classroom?

20. Which seating arrangements have you had the worst experiences with, and why do you think so?

21. Which seating arrangements have you had the best experiences with, and why do you think so?

22. Does any one form of seating arrangement work better than others?

23. Which seating arrangement is best for classroom management?

24. Which seating arrangement is best for Mathematics lessons?

25. Which seating arrangement is best for student-teacher relationships?

26. Which seating arrangement is best for group discussions?

27. Which seating arrangement is best for student mastery?

28. Where in the classroom do you primarily teach?
(Desk, Podium, Front Board, Side Board, etc.)

29. Where is your desk in relation to the student desk?
(front, side, back, etc.)

30. How do you determine conduct grades for your classroom?

Appendix B

Student Survey

All Questions Relate only to your Math Lessons/Circle your answer

1.) Is your desk too big/small for you to be comfortable during the lesson?

Yes No Not Certain

2.) Are the tables in the classroom at a height that you can reach all material on the table?

Yes No Not Certain

3.) I wish that I could change my current seating location in the classroom.

Yes No Not Certain

4.) I wish that I could sit closer to the front of the classroom.

Yes No Not Certain

5.) I wish that I could sit closer to the teacher.

Yes No Not Certain

6.) I wish that I could sit closer to the board.

Yes No Not Certain

7.) The way that the desk are arranged has changed during the last nine weeks.

Yes No Not Certain

8.) Are you able to see the board from your desk during the lesson?

Yes No Not Certain

9.) Are you able to hear the teacher from your desk during the lesson?

Yes No Not Certain

10.) Are you able to maintain eye contact with the teacher from your desk during the lesson?

Yes No Not Certain

Appendix C

Conduct Charts used School Wide for Fifth Grade Students

Fifth Grade Discipline Record for the Week of:

Teacher:

Name	Monday	Tuesday	Wednesday	Thursday	Friday
	Rewards:	Rewards:	Rewards:	Rewards:	Rewards:
	Consequence	Consequence	Consequence	Consequence	Consequence
	Restroom:	Restroom:	Restroom:	Restroom:	Restroom:

Weekly report for each student

Appendix D

Classroom A Seating Chart

Traditional Rows and Columns

Row 6	X	S	X	X
Row 5	D	X	K	X
Row 4	C	G	H	X
Row 3	X	F	B	L
Row 2	X	E	M	X
Row1	A	X	J	X

Front Board

X: Students not involved with the study
Other letters correspond with the Student ID of the students in the study

Appendix E

Classroom B Seating Chart

Traditional Rows and Columns

Row 7	R	X	X	X
Row 6	X	X	X	X
Row 5	X	N	X	X
Row 4	X	X	X	X
Row 3	X	X	Q	X
Row 2	O	X	P	X
Row1	X	X	X	X

Front Board

X: Students not involved with the study
Other letters correspond with the Student ID of the students in the study

Appendix F

Classroom C Seating Chart

Pod Seating Arrangement

Seating Chart Changed Twice During Grading Period

1st Seating Chart Beginning to Midterm

Pod 4		Pod 5	
X	X	X	X
X	X	U	X
X	W	X	X

Pod 2		Pod 3	
X	X	X	T
X	X	S	X
X	X	X	Y

Pod 1

X X X

X V

Front Board

X: Students not involved with the study
Other letters correspond with the Student ID of the students in the study
Student X has been placed in bold, italic, and underlined format for distinction from other Xs

Appendix G

Classroom C Seating Chart

Pod Seating Arrangement

Seating Chart Changed Twice During Grading Period

2nd Seating Chart Midterm to Final

Pod 4		Pod 5	
U	X	X	X
X	T	X	X
X	X	Y	X

Pod 2		Pod 3	
X	X	***X***	X
X	S	X	V
X	X	X	X

Pod 1

X	X	X
X	W	

Front Board

X: Students not involved with the study
Other letters correspond with the Student ID of the students in the study
Student X has been placed in bold, italic, and underlined format for distinction from other Xs

Treatment Effectiveness and Teaching Strategies for Students Diagnosed with Attention Deficit Disorder

Edward St. Goar

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The University of Tennessee at Chattanooga

Introduction

Among America's children and teenagers, A.D.D. (Attention Deficit Disorder) and A.D.H.D. (Attention Deficit Hyperactivity Disorder) [both terms are referred to collectively as (ADD) in this paper from here forward], rank among the most commonly diagnosed neurological disorders in school-aged children and teens. The number of teens diagnosed and being treated for ADD is well into the millions. Though the total number is not known with certainty, it is estimated that ADD affects 7.5 percent of school-aged children (Long, 2003). With so many students affected by the disorder, what is being done to help them? The intent of this paper is to examine current and recent educational research findings to discover those treatment and educational approaches that have emerged as the most effective approaches parents and teachers can use to deal with ADD in the student population, and then test specific recommended instructional strategies for such students.

Initially, this study was planned to measure variances in outcomes of test scores from a sample of ADD students who had been using stimulant medication for a long-term period of years. This plan proved unworkable due to unwillingness on the part of school administration to allow access to test scores due to confidentiality concerns. The second plan that comes to realization in this study tests the validity of specific instructional strategies for ADD students as recommended by the U.S. Department of Education. In hindsight, this second research plan is actually the better approach since any variance of measured test scores could have resulted from several factors, and would not have been attributable to stimulant medications alone.

Background

Treatment strategies have been developed for ADD that contribute to, and improve, selective and sustained attention in children with ADD (Zentall, 2005). For those students that are identified, and ultimately diagnosed, with the disorder, treatments usually begin with the use of strong stimulant medications with known and well-documented adverse side effects relating to health. Despite the risk, stimulant medications have been the primary medical treatment of choice for ADD since the 1990s (Lyon & Laurell, 2002). Studies do show short-term benefits from the use of stimulant and similar medications.

According to Barbaresi, Colligan, Weaver, Leibson, and Jacobsen, numerous studies have demonstrated the short-term efficacy of stimulants in reducing severity of the core symptoms of ADD (hyperactivity, impulsivity, and inattentiveness) and in improving social and behavioral functioning. Barbaresi also points out, however, that information about the long-term effects of treatment is limited, and that concerns about long-term safety and efficacy of stimulant treatment persist, though side effects occurred in less than 10% of episodes of treatment with stimulants, and were, more commonly, found with dextroamphetamine than with methylphenidate. (2006).

Finally, though the effectiveness of stimulant medications has been confirmed in numerous studies and clinical trials, most studies are short term in nature. Successful long term studies are few in number. Hechtman states that, of those children with ADD who are diagnosed with the ailment, and then actually begin treatment, only 18% to 50% persist in the treatment for any length of time (e.g., 2 to 3 years). Thus, available data on effects of long-term medication and psychosocial treatment are sparse and problematic (Hechtman, 2006). The reasons, for example, include children not persisting with medication due to simple forgetfulness; or that one particular medicine disagrees with the

child in some way to a greater or lesser extent, and the doctor changes prescriptions in search of a remedy that works better for the child. For these reasons, despite numerous attempts to investigate long-term medication effectiveness, few, if any, studies have been successful in conclusively determining the worth and effectiveness of ADD medications over the long term.

Parents are often concerned, not only for their child's academic performance, but their future health, as well. What if initial positive results fade over time and long-term results turn out to be unsubstantiated? While indisputable short-term improvements in student attention, behavior, and classroom performance do occur with the administering of these strong, but possibly hazardous, doctor-prescribed medications, the following question arises, particularly for parents and students. Are the positive results of the treatments of a lasting nature, with improved classroom behavior and academic performance, and, therefore, worth the well-documented risk associated with the use of these potent prescription medications?

With the uncertainty that persists, regarding medical treatment of ADD alone, the importance of an appropriate education for these students cannot be overstated, and the implications for teachers are significant. By virtue of the time they spend with such students, capable teachers that understand how to teach ADD students are one of the most important links in their overall treatment and care. By providing a proper and appropriate education that meets their needs, teachers, in fact, may represent these students' last hope.

A consensus as to which strategies and best practices work most effectively for teaching ADD students has gradually emerged in education and is also reviewed in this

paper. Curiously, though educators may be aware of the characteristics and needs of students with ADD, according to one study, most teachers that were surveyed made few individual modifications at any grade level to teach these students (Nowacek &, Mamlin, 2007). Considering what is at stake for society as a whole, emphasis on an effective education that works for such students is essential.

Purpose Statement

The purpose of this study is to begin answering the questions that have been raised above. First, a review of literature and examination of prior research on ADD is carried out, with emphasis on verified academic progress that has been made by ADD diagnosed students in the short and mid-term. The review will help provide an overview of knowledge already attained in this specialized area. For example, what research has been performed on the test results of ADD students at different grade levels over time to verify the extent of improvement that may be due to treatments? Surprisingly, as will be shown, little long-term data of a compelling nature exists regarding this important area of academic improvements for ADD students. In fact, it is important to note that, as of the writing of this paper, no research beyond 5 years duration is currently available.

Initially, this writer's objective was to discover if previously diagnosed and medically treated ADD students have (or to what extent) shown improvement or attained parity with normal students, as measured by test scores over several years time. Data in this area is, unfortunately, limited to a relatively small number of short-term studies due to the reasons cited above. In addition, results from other studies are unavailable because of confidentiality concerns. Though research in the area of stimulant medication effectiveness for ADD students is unsatisfactory, this is not the case for teaching

strategies. The knowledge base for properly teaching such students has now grown significantly, with numerous techniques and strategies available for teachers to avail themselves of, if only they actually internalize these methods and use them in the classroom.

Limitations

In the area of stimulant medication effectiveness, this study will not attempt to isolate any individual subjects, or measure and investigate individual student test results. In the context of individual learning disabilities, such real time data involves matters of confidentiality which have proved difficult, if not impossible, to overcome during the current duration of this study. In addition, through the course of maturation among adolescents, an undeterminable number of students that began medication may have discontinued use in favor of another treatment, discontinued use intermittently, or discontinued use of medications altogether. Factors such as these affect validity of any study and are a primary reason for lack of successful long-term studies.

Assumptions

Parents of ADD-diagnosed children are concerned for the well-being of their children and their academic performance in school, and are, therefore, compelled to follow their doctors' recommendations. In reality, some parents are not knowledgeable about the ADD phenomenon and its long-term effects on academic performance, or they do not have sufficient time to see to their child's needs. Some parents also may be in denial or may ignore a doctor's diagnosis because of shame they may feel if others find out that their child is labeled ADD, but it is hoped that the number of such parents is small. In reality, confidentiality laws make the latter concern a nonissue. For the purposes

of this study, it is presumed that all parents, within their means, want what is best for their children. In this case, that means that many parents will first administer one of the several prescription stimulant drugs available today.

To most parents, treatment via stimulant drugs apparently solves, or appears to solve, ADD symptoms. However, as parents learn about the potentially harmful health risks associated with the use of these medications, they begin searching for alternative treatments and looking for other approaches to deal with their child's ADD. Parents look to teachers and expect them to do the best possible job in teaching their ADD-diagnosed child. Since teaching is a profession for idealistically-inclined individuals, it is assumed that teachers also want to do the best job they can in teaching these students. The reality, as previously stated, is that most teachers in a survey made few, if any, individual modifications to teach ADD students (Nowacek & Mamlin, 2007).

Review of Literature and Related Research

The importance of excellent academic performance for students is perhaps greater today than ever before. Codding (2003) asserts that children with ADD have demonstrated significant academic problems, and are also at risk for school failure. Math, in particular, seems to be an area of difficulty for children with ADD. Therefore, parents of such children, when told of a medical cure for ADD, are, of course, compelled to follow their doctor's recommendations and administer one of the several prescription stimulant drugs available today that do, in fact, appear to quickly solve the aforementioned ADD symptoms.

ADD is hard to define exactly, and, while the exact mechanism underlying ADD remains unknown, untreated, it leaves millions of children and adults misunderstood and

unnecessarily floundering, and even incapacitated (Hallowell & Ratey, 1995). Others dismiss the ADD phenomenon, pointing out that there is no identified cause specific to ADD, and further stating the possibility that ADD may be a catch-all condition (Diller, 1998). The American Academy of Pediatrics (2000) report on ADHD mentions that there is no known biological basis for ADD. Others, such as Baughman (n.d.), categorize the ADD diagnosis as nothing more than fraud on the part of pharmaceutical companies to make huge profits.

ADD is characterized by inattention, impulsivity, and, sometimes, hyperactivity, which interfere with the academic performance of children. Students with this condition will tend to give attention to what is novel or stimulating, or they may be occupied with something that they saw or did previously, to the exclusion of what may be taking place around them at the present moment. They may have trouble focusing on important information, rather than on extraneous details or background noise.

The hyperactivity aspect, which can be motor-or verbal-related, is often seen as misbehavior at a time when children are expected to sit quietly. Finally, impulsivity causes difficulty in any task requiring one to patiently wait, and delay one's natural impulse for a moment to listen before impulsively raising hands to answer a question. Another example would be a student blurting out a question, rather than simply reading a handout that was just passed out, or pausing and listening to the teacher for directions which she is about to give (Appalachia Educational Laboratory, n.d.).

ADD does interfere with concentration and attention, making it difficult for a child to do well in school (Lombard & Germano, 2000). According to a study that examined differences in antisocial, educational, and treatment histories among young adults (ages

17-27) with ADD, relative to each other and to a community control group of 64 adults, the ADD group of individuals tended to have less education, were less likely to have graduated from college, and were more likely to have received special educational placement in high school (Murphy, Barkley, & Bush 2002).

Another group of researchers, Marshal, Molina, Brooke & Pelham (2003), found that deviant peer group affiliation was evaluated as a risk factor for substance use in adolescents with childhood ADD. Results suggested that children with ADD were more likely than children without ADD to become involved with deviant peers, and, as a result, more likely to use substances. Moreover, the relationship between deviant peer affiliation and substance use was stronger for adolescents with ADD, suggesting that, once they are immersed in a deviant peer group, adolescents with ADD are more vulnerable to negative social influences of a deviant group. That study marked a step forward in identifying high-risk pathways from childhood ADD to substance use in adolescence.

Starobrat-Hermelin & Kozielec (1997) report that dietetic factors can play a significant role in causes of ADD, and a magnesium deficiency, for example, can help in revealing hyperactivity in children. The consequences of the lack of an appropriate therapy for children with ADD appear to be serious, according to the article. Some of these children do not respond to prevailing therapy methods. The position that ADD is not a proven syndrome also has many advocates, including physicians and educators. However, whether or not a syndrome exists, it is clear that many children have difficulty in school because of an inability to attend to tasks (Campbell & Cohen, 1990).

Many parents, including this writer, report that they have seen remarkable improvements in their children’s academic performance: report cards that have gone from

bad to good, a new ability to pay attention in class, less impulsiveness, and improved behavior. Problems relating to poor self-esteem diminish. Once treatment begins, children are often amazed to find they can focus on subject matter in school and concentrate on assignments, whereas before, this was extremely difficult, if not impossible. Certainly anyone would agree that these are amazing and very desirable developments. Of concern, however, are the large numbers of confirmed and potentially harmful side-effects, including, among others, the potential for stunting further growth, liver damage, and impaired brain development in children.

The stimulant medications responsible for the noteworthy classroom improvements are regulated by the Drug Enforcement Administration (D.E.A.), and are classified as either methylphenidates or amphetamines, depending on the specific medication prescribed.

The D.E.A. classifies methylphenidate (the generic name for Ritalin) and amphetamine (Dexedrine and Adderall) in the same Schedule II category as methamphetamine and cocaine. This includes the most potent opiates and barbiturates, all of which have the very highest potential for addiction and abuse (Breggin, 1999). If the stimulant medications are not effective for particular children, those may be given alternative tricyclic antidepressants (Reichenberg-Ullman & Ullman, 1996).

Millions of parents across the United States feel trapped in a serious situation. Not only have their children been diagnosed and labeled as having ADD, but the prescribed treatment usually consists of one of the above-mentioned, powerful stimulant drugs. The future health of their child may be at stake. What if initial positive results fade or if long-

term results turn out to be unsubstantiated? Are the current treatments valid or worth the risk?

According to Wender (1995), short-term benefits have certainly been achieved with the administering of these stimulant drugs with an effectiveness rate of 60 to 80 percent in school-aged children. Lasting results, however, have not been shown. In yet another study, by Carlson & Bunner (1993), it was found that results in daily classroom performance consistently reveal substantial beneficial effects of medication, whereas studies of achievement over periods of months and years fail to yield evidence of beneficial medication effects.

Peter R. Breggin M.D. and David Cohen PhD (1999) go even further in their book, *Your Drug May be Your Problem,* and disparage the prescribing of psychiatric drugs, including stimulant drugs, to children with developing brains, and encourage patients and doctors to reconsider this course of treatment, and, if taking the medications already, how to withdraw from them safely. With such information, parents are rightfully concerned about extended usage of these prescribed medications.

The expansion and widespread use of stimulant medications to treat children with ADD only began during the 1990s, so long-term studies regarding effectiveness of these treatments are, in fact, sparse. Lyon and Laurell assert that improper nutrition is the underlying cause of ADD, as well as food allergies and the obesity epidemic in this country, thus opening the possibility for solving the ADD dilemma more fundamentally, at least for some ADD children (Lyon & Laurell, 2002).

Books have appeared that offer nutritional programs to treat ADD disorders, such as the book entitled, *The Brain Wellness Plan,* by Lombard and Germano. (2000). Butler, a

determined principal at Browns Mill Elementary School in Lithonia Georgia, ordered sweeping changes in her school to combat obesity in her students. Soda and snack foods in vending machines were removed, and the lunch menu was modified with only healthy foods. Despite anger from parents, she stayed the course. Within a year, not only did the children lose weight, but also visits to the school nurse dropped 30%, and disciplinary problems dropped by 20%. There was a truly unexpected result: test scores improved by 10% – 15%, according to an article from ABCnews.com that was aired by the network on June 4, 2004. These studies do suggest that a cause of at least some attention deficit problems may be nutrition-related for some students.

To what extent, then, has the intervention of stimulant medications to treat symptoms of ADD succeeded in helping students excel academically over time? As a result of ongoing treatments through middle and high school grade levels, have diagnosed students attained a degree of academic performance that equates to normal, undiagnosed classmates, by that time?

These and similar questions are difficult to answer, as results from such studies are currently short-term in nature, or limited in scope. For example, two case studies examined the usefulness of curriculum-based measurement of math and reading for evaluating the effects of methylphenidate (a class of stimulant medications) on the academic performance of two students diagnosed with ADD. Results suggest that the curriculum-based measures were sensitive indicators of the students' responses to medication (Stoner, G., Carey, S.P., Ikeda, M.J. & Shinn, M.R., 1994). Volpe, R.J. (2003) states that, although there is rich research literature concerning the treatment of ADD, the majority of studies have involved interventions taking place outside naturalistic settings.

Few studies have been conducted in school settings, and the vast majority of these have targeted the core symptoms of ADD, that is, inattention, lack of restraint, and over activity. While the former study supports the use of test scores in measuring effectiveness of medication, the results from large-scale studies are few in number, at this time.

While administering of prescribed medications has yielded immediate undeniable improvements in student performance, long-term improvements can come about as a consequence of other factors. Observations by career teachers point to student maturity that occurs naturally through the course of adolescence. They suggest that improvements in performance for ADD students, as measured by eleventh grade PSAT test score outcomes, will transpire to some extent, anyway, regardless of the administering of an ADD treatment, or lack thereof. Therefore, it was hypothesized that the variance or difference in achievement scores between previously diagnosed ADD students and non-diagnosed students is high at the sixth grade level and much smaller at the eleventh grade level; the latter apart from continuation or discontinuance of medication in the previously ADD-diagnosed group of students and depending on the final analysis of variance and standard deviation.

From a developmental perspective, Johnson points out that we are asking young children to memorize letters and words already in preschool when only part of the brain in the right hemisphere is developed and available for reading (Johnson, 2007). She states that first only the right hemisphere of the brain develops for reading, beginning around 4 to 7 years of age. She believes that, by having children begin reading activities at too early an age, we create learning problems for them in the future, especially boys. Johnson asserts that reading should be taught only after children have developed and integrated

both their right and left reading centers in their brain, which she says usually occurs during the first grade. These considerations open a related area where further research could bring benefits to our nation's children.

Teaching Strategies for ADD

The above considerations lead to the second aspect of this study which is to discover those educational strategies that are effective for teaching ADD students and determine their effectiveness. As these children grow older, what has research shown to be the best teaching strategies and practices for them? In contrast to the limited research on stimulant medication effectiveness that has been carried out, there is much research regarding teaching methods that are said to work well for many students diagnosed with ADD. This may come as a surprise to some who thought that ADD was exclusively a medical problem to be solved by typical medical interventions, and not through the use of adapted educational strategies.

Much educational research has been carried out with regard to instructional strategies for ADD students. While some instructional methods were found to be without empirical support, other educational interventions such as those that increase task and setting stimulus conditions (e.g., novelty) have been shown to normalize attention of ADD students to the same level as their peers, and, in some cases, to a level even better (Zentall, 2005). However, students with ADD will get bored with any novelty more rapidly than their peers. To stay ahead, educators need to make periodic changes in settings, tasks, and rewards. This can be done through bulletin boards and word boards that reflect current material being taught. But, according to Zentall, most empirical studies show that academic performance of ADD students can be improved to the same

level as their peers when novelty is added. Structure is also seen as important in teaching these students.

The U.S. Department of Education has taken available educational research and put forward those key teaching-related practices and strategies in a guide that has been found to be especially useful for students with ADD. They stress that these students learn best when academic lessons are carefully structured. Teachers tell students what material will be covered during the course of several months, expectations are provided up front as to what children will learn from each lesson, and each lesson is placed into the context of previous lessons. Future lessons are also previewed, instructions and scheduling are simplified, behavioral expectations are set, and needed materials are specified.

The Department also stresses the importance of ongoing, probing questioning during a lesson, allowing time for students to think, while watching for signs of daydreaming or frustration. Re-teaching material should be allowed for. Teachers should pay particular attention to logical transitioning from one phase of instruction to another in order to conduct productive lessons. To accomplish these instructional objectives, they urge teachers to be predictable. Besides structure, consistency is important for ADD students who may not deal well with change. To help students stay focused, teachers should support their participation in the classroom. This is done through several strategies, but providing advanced warning that they will be called upon shortly is one effective means.

Other strategies include the use of various audiovisual materials such as overhead projectors to teach lessons. Assignments are best broken down into smaller less complicated tasks, and follow-up directions should be done, not only orally, but in

writing on a board in front of the class to address different learning styles. Often, learning can include a teacher assigning learning partners, or small groups of students, to work in cooperative learning groups on some aspect of a lesson, and then present their findings or consensus to the class. Additionally, the Department recommends elimination, or reduction, of timed tests. And, as recommended universally, lower classroom noise levels. Noise and disruptions are very distracting for ADD students. I plan to utilize a selection of the above key teaching-related practices and strategies as set forth by the U.S. Department of Educations for students. The publication states that the strategies set forth are highly useful for all students, not only those diagnosed with ADD.

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Appendix A

Lookout Valley Elementary School Name _____

November 2007 / Fifth Grade

Date _____

The Roaring Twenties & the Great Depression

Social Studies: Pre-Test Post Test **(Circle one)**

For the questions below, put the letter of the best answer in the space provided.

Complete the following three sentences:

_____ 1. The twenty First Amendment…
- A. gave women the right to vote.
- B. repealed prohibition
- C. made it illegal to sell, make, or transport alcoholic beverages.
- D. allowed people to buy on credit or with installment plans.

_____ 2. The Harlem Renaissance had an impact in the United States on…
- A. poetry, jazz music, and dance.
- B. classical music, television, and radio.
- C. mass production and women's suffrage
- D. the Nineteenth Amendment

_____ 3. Two features of an economic bust are…
- A. high employment and inflation.
- B. high debt and high employment.
- C. high unemployment and business growth.
- D. high unemployment and high debt.

Answer the following questions:

_____ 4. Which of the following answer choices below did not help companies to make more useful and better quality products during the 1920's?
- A. Mass production
- B. Standardization
- C. Prohibition

D. Credit and installment payments

Continued on other side →

_____ 5. Why did the stock market crash and the banking crisis occur?
A. The economy was doing well.
B. World War II began.
C. People had bought too much on credit
D. Unemployment was high.

_____ 6. In which direction did many people migrate during the great depression?
A. From California to Detroit
B. From Oklahoma to California
C. From cities to farms
D. From Detroit to the South

_____ 7. Which two problems caused the dust bowl?
A. Bank failures and over-planting
B. Drought and migration
C. Drought and over-planting
D. Lack of cleanliness and care

_____ 8. President Roosevelt introduced what government program to help Americans through the Great Depression?
A. The Homestead Act
B. NASA
C. The Immigration Reform Act
D. The New Deal

_____ 9. During the Great Depression, which new program introduced as part of "Roosevelt's Alphabet Soup" benefited Tennessee the most?
A. The Tennessee Valley Authority
B. The Civilian Conservation Corps.
C. The Works Progress Administration
D. The Social Security Act

The Effects of Classical Music on Learning in the Classroom

Melissa Thornley

Education 590, Fall 2007

The University of Tennessee at Chattanooga

The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149) has approved this research project 08-065.

Introduction to the Problem

Does listening to classical music lead to higher test scores, higher grades, more understanding of mathematical concepts, and, overall, better performance in school? This is a question that has been asked and answered in many ways and with many different outcomes. There have been a multitude of studies that have explored the effects of music on a child's brain function. Scientists and researchers have studied different types of music, music heard in the womb, music heard as an infant, and music in the classroom. From classical music to silly songs, Mozart vs. Alvin and the Chipmunks, and Jazz vs. Blues, all have been studied in-depth, and have been both proven to maximize, and to not have any effect, whatsoever, on learning acquisition in the classroom. What they haven't found is that learning acquisition is stunted by listening to music. More often than not, the effects of music in the classroom have a positive effect on student learning. Many schools throughout the country have suffered financial setbacks and an increased emphasis on student learning that have led to music instruction being taken out of the curriculum, altogether. So far, Hamilton County schools have not been faced with such challenges, and music is still taught weekly through related arts. Is once per week enough, though?

Review of Literature

There is very little doubt in researchers' and educators' minds that listening to children's music increases literacy acquisition in that it helps build connections between words and print. "Music and reading go together because singing is a celebration of language" (Kolb, 1996, p. 76). How does classical music impact learning? Bales states, "music seems to prime our brains for certain kinds of thinking. After listening to classical

music, adults can do certain spatial tasks more quickly, such as putting together a jigsaw puzzle" (Bales, 1998).

In the same article, Bales states that classical music is different from other types of music such as rock and country. "Classical music has a more complex musical structure" (Bales, 1998). Fuller states that, "scientists believe that the structured, complex melodies of classical music 'warm up the brain' and enhance learning because they are similar to the complex neurological patterns of brain activity" (Fuller, 2001, p. 89). As well, James states that, "music is filled with patterns, and that's what math is really about. You're not going to explain the intricacies of notes and scales to a three-year-old, but exposing a child to music now will help him learn these concepts later" (James, 2000, p. 37). What researchers believe is that the complexity of classical music primes the brain to solve spatial-temporal, reasoning problems more quickly. Researchers and scientists refer to this as the "Mozart Effect," although the original study was questioned when it was misinterpreted and unable to be replicated, and, as such, the "Mozart effect" was questioned (Albertalli & Nilsen, 2001, p. 367) Albertalli and Nilsen state that, "music's rhythm, its patterned repetition of notes and phrases, has a mathematical connection" (Albertalli & Nilsen, 2001, p. 367).

The definition of spatial-temporal reasoning is understanding how items fit in space and time. In the *Everyday Mathematics* series of math instruction that Hamilton County is using in the elementary schools, there is a definite link to spatial-temporal reasoning. This learning style of mathematics is designed to prime the brains of young children to understand advanced concepts early so that when they enter middle and high school, algebra and calculus will be more easily understood. As an older student in the

education program at UTC, *Everyday Mathematics* is as foreign to me as a foreign language. Saying that, I completely understand how the program will lead to a better understanding of higher-order thinking and understanding the concepts of higher mathematics. I think it would be interesting to conduct a study on using classical music along with *Everyday Mathematics* to gauge student learning, as opposed to using the *Everyday Mathematics* program by itself.

In addition to classical music leading to higher order thinking skills, it also has a calming effect on students in the classroom. James states, "music helps establish a comfortable feeling in the learning environment by allowing the teacher to share something with kids" (James, 2000, p. 36). As well, Giles states that, in the program known as *Accelerated Learning*, softly played background music is used to slow the heart rate and relax the students' minds and bodies while they work. By both reducing stress and allowing the students to focus attention on the task at hand, the music increases brain function so that students learn faster than usual (Giles, 1991, p. 43).

Data Collection and Results

Methodology

This research project will include 12 students in a kindergarten classroom of 17 students. The project will span a time period of 1 week of listening to the classical music of Mozart during morning routine work, and throughout the day, when possible, during center work. Students will be given a pre-test and post-test on patterns, which will be used to gauge student learning throughout the time period of the project. Students will also be observed throughout the project to document the effects of listening to classical music on the overall school performance and behaviors.

As students arrive in the morning, they are given a morning work assignment that will keep them busy while the teacher is taking attendance, and through the morning announcements. Also, during this time period, a reading interventionist works with children. The students arrive in the classroom at about 8:20 a.m., and usually start centers at about 9:15 a.m. It is during this time period that classical music will be playing as background music while students work.

The research project will be conducted over a 5-day period. The students will be given a pre-test on the day before the music is started; the post-test will be given on the last day of the project. The project will take approximately 6 days to complete. There are 17 students in the class; only 12 parents signed the consent forms so the results will only pertain to the 12 students who have signed consent forms on file. All the students will be given the pre- and post-tests, and, as well, all the students will be listening to the classical music. The music that will be used will be Mozart: Serene and Sublime, Mozart's Most Relaxing Melodies.

Results

The plan of the project was to give a pre-test to gauge a difference of learning on the basis of listening to classical music. The students' performance on the pre-test indicated that the skills which they were being tested on were already acquired (see Figures 1–4). Because of the time constraints, I continued with the research looking for other ways that listening to music enhanced student performance.

I found that the students were much more focused and calm when the music played. On most mornings, the students spend a great deal of time talking with the other students, and sometimes it is difficult for them to complete their morning work. Not all

students, but some students, are easily distracted from their work. On the first morning that the music was playing, the students came in, sat down, and started doing their work. Some of the students commented on the music, while others didn't seem to notice. The noise level had decreased by about 60 percent. As well, during the week, when the students were doing their center work, and were not focused on their work, I turned on the music; again it calmed down the students, and they became more diligent and completed their assignments. When the students had completed their work, and were given free time to read or work puzzles, they were much more involved in that task when the music was playing.

I noticed that, as one of the articles I had read on the effects of classical music stated, the students would recognize patterns in the music. A student commented that one of the pieces being played was the song from the Nutcracker ballet. I was much impressed by this as it, indeed, showed that the students could recognize the patterns of the music. As well, while the music played, a couple of female students told me that they study ballet, which led me to believe that listening to the music encouraged their love for the arts, which researchers believe to increase student learning, in addition to creating more well-rounded students.

Conclusions and Recommendations

In an ideal situation, I would have liked to conduct this research over several weeks with various types of classical music. As a very small introduction to what could possibly become a very meaningful research project, this project allowed me, as a prospective educator, to value the emphasis of classical music in the classroom.

STUDENTS	Right Answers/Series 1	Wrong Answers/Series 2
A	13	0
B	11	2
C	12	1
D	13	0
E	13	0
F	13	0
G	13	0
H	13	0
I	12	1
J	13	1
K	13	0

Figure 1. Pre-test results.

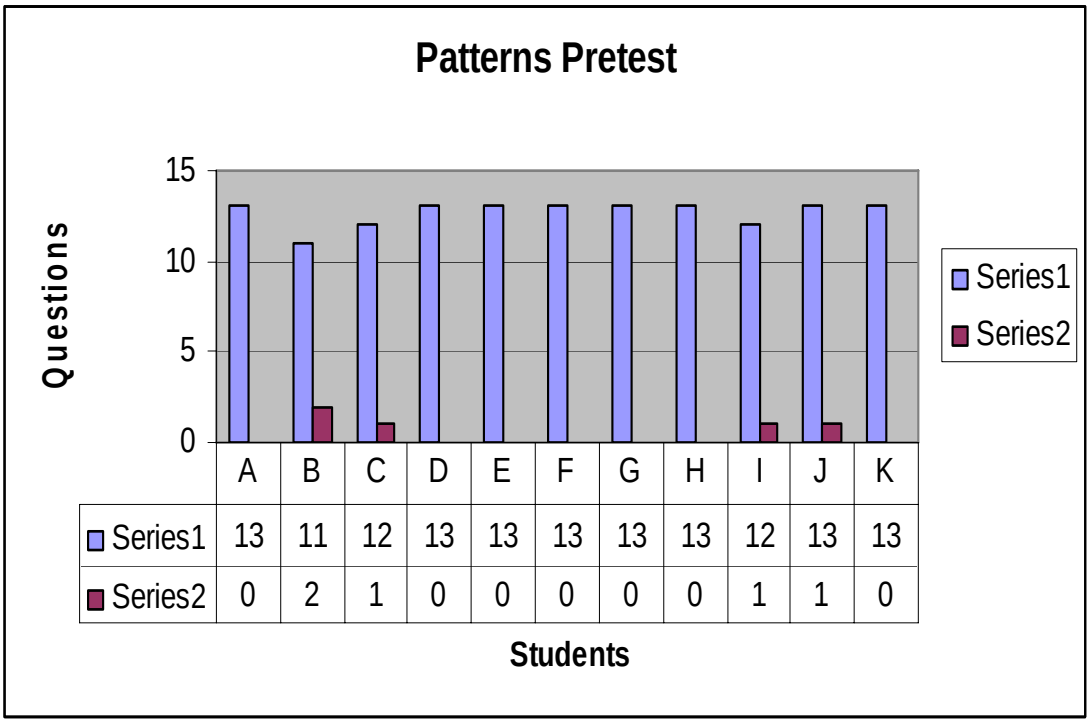

*Figure 2.*Pre-test results graph.

STUDENTS	Right Answers/Series 1	Wrong Answers/Series 2
A	12	1
B	13	0
C	13	0
D	13	0
E	11	2
F	13	0
G	13	0
H	13	0
I	13	0
J	13	0
K	13	0

Figure 3. Post-test results.

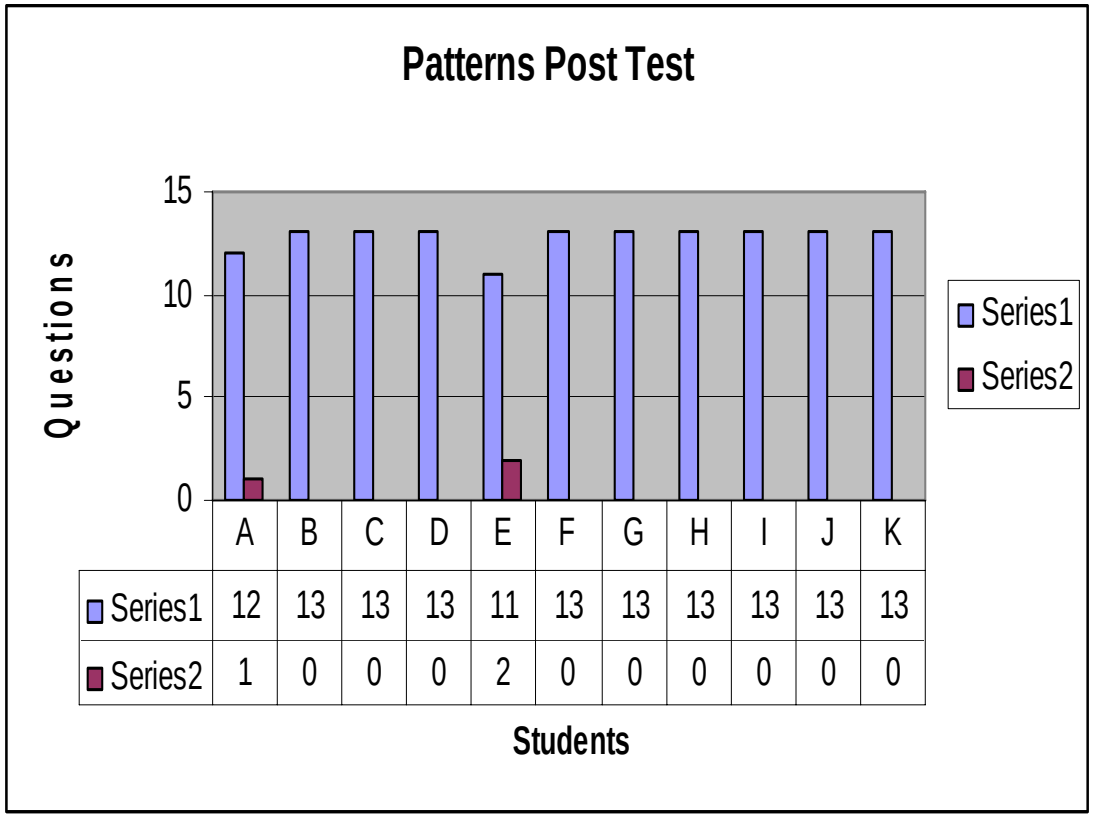

Figure 4. Post-test results graph.

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Higher Order Thought:
A Comparison of Elementary and High School Students in a Visual Arts Context

Jennie Goodrum Turrell

Education 590, Fall 2007

The University of Tennessee at Chattanooga

The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149) has approved this research project 08-057.

Introduction to the Problem

Purpose/Objectives of Research

In schools, art is often reduced to only what a child produces that is worthy of the bulletin board outside the classroom or the refrigerator door. Hetland, Winner, Veenema, and Sheridan note that, when asking someone about what students learn in art class, one is "likely to hear that they learn how to paint, or draw, or throw a pot" (Hetland, Winner, Veenema, & Sheridan, 2007, p. 4). While students do learn to paint and draw, there is much more at work here. Students are learning how to think. Art is about doing, but it is also about thinking. Art requires students to retrieve and remember information, understand concepts, apply procedures, analyze materials, evaluate and make judgments about artwork, and create and generate new ideas.

For many reasons -- economic, political, and philosophical -- the visual arts have often taken a back seat to subjects that are more easily benchmarked and tested. The purpose of this study is to show that the visual arts propel students, even early elementary students, into higher order thought.

If reaching more complex levels of higher order thought is no longer seen as a cumulative or stair-step process, is it reasonable to believe that educators can prepare and propel students into higher order thinking by using the visual arts as a vehicle.

Perkins and Salomon suggest, "A great deal of the knowledge students acquire is 'inert' or 'passive.' The knowledge shows up when students respond to direct probes, such as multiple choice or fill-in-the-blank quizzes" (Perkins & Salomon, 1988, p. 23). This passive knowledge does not lead to transference. Students may know that the Declaration of Independence was adopted on July 4, 1776, but they may not make the

connections that answer questions of why it was adopted and what the implications were for the British and the Colonists. The visual arts offer an active and ever-changing body of knowledge. All artwork, made or observed, must be considered in the context of other influences. In a classroom, Perkins and Salomon suggest, “Teachers can directly teach problem-solving and other strategies and provoke broad-spectrum practice reaching beyond their own subject matters” (Perkins & Salomon, 1988, p. 23-27). Education in the visual arts can be a model for this expansion of cognitive and knowledge processes at the elementary level, as well as at the secondary level.

The research question asks: When working in the context of the visual arts, are elementary school students capable of achieving the same advanced levels of higher order thought as high school students? Are elementary school students capable of complex analytical thought? If so, can learning in a visual arts context enhance and enrich this effort? Can we expect more from students than simplistic answers to narrow questions?

Study in the visual arts promotes multiple levels of thinking. If a subject like the visual arts can offer so much to students, why do many school systems marginalize or eliminate it from the curriculum?

Review of Literature

In 2000, a group of scholars published a complete revision of the original framework of Benjamin Bloom’s *Taxonomy of Educational Objectives*. In the original framework, Bloom’s cognitive process dimensions were in ascending order from least complex to the most complex. To reach the more complex dimensions, Bloom asserts an individual needs to master the less complex dimensions first. In effect, one would need to move from Knowledge to Comprehension before moving to Application and Analysis. A

mastery of Synthesis would be necessary in order for one to master Evaluation (Anderson Krathwohl, Airasian, Cruikshank, Mayer, Pintrich, Raths, & Wittrock, 2001).

In the revised framework, Anderson et al. (2001) adapted Bloom's taxonomy to offer a more thorough breakdown of the cognitive processes. Not only did they modify the six original processes, they broadened the scope. To the original taxonomy, Anderson et al. (2001) added a Knowledge Dimension with four areas of focus: Factual, Conceptual, Procedural, and Metacognitive. Another significant change in the interpretation and use of the taxonomy is the idea that the processes are not cumulative or set in stages. They describe the dimensions as independent entities, not as stepping-stones. In their argument, for example, one could achieve the cognitive process of Evaluation even if one had not sufficiently mastered Application.

In his 2002 book, *Art and Cognition*, Efland recognizes that the arguments over whether or not art is cognitive are no longer useful in trying to change the hearts and minds of the leaders in educational circles. The more profound question he suggests is, "what cognitive abilities do the arts provide that other subjects can neither provide, nor do as well as the arts?" Further, "what special capabilities do the visual arts contribute to cognition as a whole?" (Efland, 2002, p. 157).

Efland continues the argument for cognition and the arts by describing four elements or "features" the arts provide. The first is cognitive flexibility. Learning in the arts is unique. There are no perfect or predetermined answers. Interpretation and judgment are implicit requirements of work in the arts. The second argument for the arts is integration. Art is about finding context and connections in the world. The third argument is imagination. Metaphor drives art. It is critical in art to have the capacity to

find “significant connections, draw inferences, and solve problems” (Efland, 2002, p. 159). Efland’s fourth and final argument for the arts is the value of aesthetics. Perception and response to the arts and the world have intrinsic “educative value” (Efland, 2002, p. 159).

Eisner’s idea of aesthetics supports Efland’s claim. For Eisner, aesthetics are about how one experiences the world. “Virtually every form that can be experienced, from sound, to sight, to taste and touch, can yield aesthetic forms of experience” (Eisner, 2002, p. 231). They can be aesthetic forms, but one must reflect and think about them as such. Forms can have multiple meanings. One must choose to engage the aesthetic one. “A tree, for example, can be viewed as and investment in the value of one’s property, as a species of flora, as a source of shade, or as an expressive form that provides a certain quality of experience when one looks through its leaves just before sunset”(Eisner, 2002, p. 231-232).

In *Studio Thinking* (2007), Hetland, Winner, Veenema, and Sheridan work to define more clearly what happens in a studio environment. Although similar to the ideas put forth in the Anderson et al. (2001) Taxonomy, these authors define techniques and practices specific to an art studio or artist. They name these areas Studio Habits of Mind. These habits include Developing Craft, Engaging and Persisting, Envisioning, Expressing, Observing, Reflecting, Stretching and Exploring, and, finally, Understanding the Art World (Hetland, Winner, Veemena, & Sheridan, 2007).

Data Collection and Results

Data Collection

Methodology

In two independent sessions, individual student participants are given a series of 100 cards with images of artworks from the 19th Century. The images are a mixture of artwork from North, South, and Central America; Europe; Asia; Africa; the Pacific Islands; and Australia (see Appendix B).

Students are asked to select a grouping of images, 10 to 25 images, to form their own "collection" of work. Participants become curators of their own museum. There are no restrictions on how they select the artworks. Once the initial selections are made, students answer a series of questions about why they made their choices (see Appendix C).

The questions were intentionally developed with increasing complexity. This allows student participants to move along the cognitive domain spectrum as the questions progress and as the students are able. The series of questions can lead to responses at the highest levels of cognitive processing. By their nature, not all questions in the questionnaire elicit highly-sophisticated answers. Many of the initial questions are simply questions that require recollection or basic knowledge. As the questionnaire progresses, the questions become more intricate, and provide an opportunity for more complex answers.

There are eleven (11) points in the questionnaire where measures are taken for evaluation. Participant answers are evaluated initially in the Cognitive Process Dimension, and, secondly, in the Knowledge Dimension. These results are recorded in a matrix adapted from the Anderson et al. (2001) taxonomy. Individual participant responses are evaluated and tallied. The tallied responses are collected in a master matrix for participants in the high school or elementary school. These collective results are

evaluated for frequency. This calculation shows which areas of the taxonomy respondents are most frequently attaining. Responses to these questions from elementary and high school students will be collected, reviewed, and compared. They will be measured in the context of Anderson's *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives.*

In the second sitting, on a different day, the initial "collection" is returned to the participant. Students have access to the entire library of 100 images. Participants are asked to evaluate their "collection." Student may choose to make any changes. Once selections are complete, and their the final images are chosen, the image numbers are recorded.

Students are then instructed to eliminate five artworks from their collection. Once they have removed five images, students are then asked what the remaining images have in common. They are asked which image is the most important in the collection. In the end, they are asked to name their collection of artwork (see Appendix C).

Responses to these questions, from elementary and high school students, are collected, reviewed, and compared. The student responses are recorded for the purposes of research with a unique participant number. High school participants respond to the questionnaires in writing. The responses of the elementary school participants are digitally recorded and transcribed for evaluation. The digital recordings of student answers will be destroyed after they have been transcribed and will not be used for any other purpose than for this research project. Anecdotal responses will be recorded, as well. All responses will be confidential.

In a second document, student responses to a series of questions will be recorded after each independent session.

Individual and group responses are recorded and evaluated. After this age-related information is processed, it is compared to that of other age groups.

Participant Recruitment Plan

In the setting of a rural Marion County elementary school, five student participants were gathered to participate in this study. Curriculum and scheduling restrictions required that the research be completed during their visual art classes, significantly limiting the pool of potential participants. Students in this school meet for art classes twice a week for 40 minutes. Each participant is required to fulfill two, 30-minute sessions. There were three, first-grade participants, and two, third-grade participants. Elementary participant responses were digitally recorded and then transcribed.

Six high school students from a private K-12 school in Hamilton County participated in this study. Students were able to participate in this study during class, study hall, and after school. Each of the six students completed two independent sessions, lasting approximately 30 minutes each. High school students gave written responses to the questionnaires.

Results

The high school participant responses (see Figure 1) indicate that this group of students was successful in reaching each of the six Cognitive Processing Dimensions. The most frequent responses (26%) fell into the Understand category. The Evaluate category resulted in 23.9% of the responses. The Analyze category resulted in 21.7% of the responses.

High School Student Responses within the Anderson et al., (2001) Taxonomy Structure

Taxonomy	Tally	Frequency (f)	Relative Frequency	Percent Frequency
Remember: Factual		0	0.000	0.000
Remember: Conceptual	•••••	5	0.109	10.870
Remember: Procedural		0	0.000	0.000
Remember: Meta-Cognitive		0	0.000	0.000
Understand: Factual	•••	3	0.065	6.522
Understand: Conceptual	••••	4	0.087	8.696
Understand: Procedural	••••	4	0.087	8.696
Cognitive	•	1	0.022	2.174
Apply: Factual	•	1	0.022	2.174
Apply: Conceptual	••	2	0.043	4.348
Apply: Procedural		0	0.000	0.000
Apply: Metacognitive		0	0.000	0.000
Analyze: Factual	•••••	5	0.109	10.870
Analyze: Conceptual	••	2	0.043	4.348
Analyze: Procedural	••	2	0.043	4.348
Analyze: Meta-Cognitive	•	1	0.022	2.174
Evaluate: Factual	••	2	0.043	4.348
Evaluate: Conceptual	•••••	5	0.109	10.870
Evaluate: Procedural	•	1	0.022	2.174
Evaluate:Meta-Cognitive	•••	3	0.065	6.522
Create: Factual	•	1	0.022	2.174
Create: Conceptual	•••	3	0.065	6.522
Create: Procedural	•	1	0.022	2.174
Create: Meta-Cognitive		0	0.000	0.000
Total		46	1.000	100

Figure 1. High school student responses within the Anderson et al. (2001) taxonomy structure.

The elementary school participant responses (see Figure 2) indicate that this group of students was successful in reaching each of the six Cognitive Processing Dimensions. The percentages between areas of participation were distributed between the first five of the processes in ranking order of Understand (24.32%), Remember (21.62%), Evaluate (18.92%), Analyze (16.22%), Apply (13.51%), and Create (5.41%).

Both high school and elementary percentage responses were highest in the Understand category, with the high school response at 26.09% and the elementary response at 24.34%.

Elementary School Student Responses within the Anderson et al., (2001) Taxonomy Structure

Taxonomy	Tally	Frequency (f)	Relative Frequency	Percent Frequency
Remember: Factual	•••	3	0.081	8.108
Remember: Conceptual	•••••	5	0.135	13.514
Remember: Procedural		0	0.000	0.000
Remember: Meta-Cognitive		0	0.000	0.000
Understand: Factual	•••	3	0.081	8.108
Understand: Conceptual	•••	3	0.081	8.108
Understand: Procedural	•••	3	0.081	8.108
Cognitive		0	0.000	0.000
Apply: Factual	•	1	0.027	2.703
Apply: Conceptual	••	2	0.054	5.405
Apply: Procedural	•	1	0.027	2.703
Apply: Metacognitive	•	1	0.027	2.703
Analyze: Factual	••	2	0.054	5.405
Analyze: Conceptual	•••	3	0.081	8.108
Analyze: Procedural		0	0.000	0.000
Analyze: Meta-Cognitive	•	1	0.027	2.703
Evaluate: Factual	••	2	0.054	5.405
Evaluate: Conceptual	••••	4	0.108	10.811
Evaluate: Procedural		0	0.000	0.000
Evaluate:Meta-Cognitive	•	1	0.027	2.703
Create: Factual	•	1	0.027	2.703
Create: Conceptual	•	1	0.027	2.703
Create: Procedural		0	0.000	0.000
Create: Meta-Cognitive		0	0.000	0.000
Total		37	1.000	100

Figure 2. Elementary school student responses within the Anderson et al. (2001) taxonomy structure.

The responses to the question in the questionnaire, “Why is this the most important work?,” revealed the elementary students reaching higher levels on the Knowledge Dimension and Cognitive Process Dimension than the high school students (see Figures 3-6).

Frequency Tally for High School Students on Question #10: Why is this the most important work?

		The Cognitive Process Dimension					
		Remember	Understand	Apply	Analyze	Evaluate	Create
The Knowledge Dimension	Factual Knowledge				••••		
	Conceptual Knowledge						
	Procedural Knowledge					•	
	Meta-Cognitive Knowledge					•	

Student Participants: 6
Total Unanswered Questions: 0

Figure 3. Frequency tally for high school students on question 10.

High school participant responses fell in the Analyze and Evaluate dimensions, but 66.67% of the responses were in the Factual Knowledge Dimension, the least complex dimension in the taxonomy (Figure 4).

Percentage Frequency for Question 10: High School

Taxonomy	Tally	Frequency (f)	Relative Frequency	Percent Frequency
Analyze: Factual	••••	4	0.667	66.667
Evaluate: Procedural	•	1	0.167	16.667
Evaluate: Meta-Cognitive	•	1	0.167	16.667
		6	1.000	100.000

Figure 4. Percentage frequency for high school students on question 10.

Elementary school participant responses fell in the Analyze, Evaluate, and Create dimensions. All of the responses fell above the Factual Knowledge dimension (see Figure 6).

Frequency Tally for Elementary Students on Question #10: Why is this the most important work?

The Knowledge Dimension	The Cognitive Process Dimension					
	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge						
Conceptual Knowledge				••		
Procedural Knowledge						•
Meta-Cognitive Knowledge					•	

Student Participants: 5
Total Unanswered Questions: 1

Figure 5. Frequency tally for elementary students on question 10.

Percentage Frequency for Question 10: Elementary

Taxonomy	Tally	Frequency (f)	Relative Frequency	Percent Frequency
Analyze: Conceptual	••	2	0.500	50.000
Evaluate: Meta-Cognitive	•	1	0.250	25.000
Create: Procedural	•	1	0.250	25.000
		4	1.000	100.000

Figure 6. Percentage frequency for elementary students on question 10.

Conclusions and Recommendations

Conclusions

The results of this study indicate that, when elementary and high school students encounter questions in the context of the visual arts, they can be successful in achieving high levels of cognition. Work in the visual arts can provide a mechanism for students to engage in higher order skills.

This study does not address the transferability of these thinking processes, but it does show that students, in particular, elementary students, are capable of this type of complex thought.

Recommendations

When working in the context of the visual arts, elementary school students are capable of achieving the same advanced levels of higher order thought as high school students. It is clear, from this research, that discussions in a visual arts context can successfully bring elementary and secondary students into higher order thought.

Secondary students were more consistent in falling into the higher levels of the taxonomy. Their success could be due to experiential, developmental, or instructional elements. These high school students are from a private high school in Hamilton County. Each of the participants has selected visual art as an elective course. They are in art class more than 5 hours per week. The class sizes range from 5 to 15 students. Each participant has had the opportunity to visit a museum, and study art production, art criticism, art history, and art aesthetics as a part of their high school art curriculum.

Are elementary school students capable of complex analytical thought? In the context of this project, elementary students were successful in reaching the higher levels of the taxonomy, as well. Most likely, their success in this is not due to the same experiential, developmental, or instructional elements. These students live in a rural

Tennessee town. Only one student has been to an art museum. These participants attend visual art class twice a week for 40 minutes. Their classes have over 25 students. Their curriculum is based on the same components of art education: production, art history, art criticism, and aesthetics.

Can learning in a visual arts context enhance and enrich this effort? Anecdotally, one of the elementary student participants provides an example of how working in an art context enhances the ability to think. This third grade student scored as well, or higher, in three cases, than the high school students in the Knowledge Dimension. Of his responses, 60% were placed in the Cognitive Dimensions of Analyze and above, with 40% at Evaluate or above. This student has never been to an art museum, or a museum for that matter, and does not have a clear idea of what one might be like. When answering questions about what he might find at a museum, he answered, “I might see some fish. You could buy maybe a couple of toy things.”

When picking out images for his “collection,” this participant asked about portrait of a bearded man. He asked, “Was this a drawing? Well, it looks just about like the Mona Lisa … except it is a man with a beard and hat. I like a Mona Lisa. It is one of the most famous art things I have ever seen.” This student was able to make complex connections based on a painting he studied from a poster of Mona Lisa in his art classroom in the previous academic year. Imagine what increased exposure to art might provide this student.

As Perkins, (1994) suggests, “Looking at art requires thinking…. It provides an excellent setting for the development of better thinking, for the cultivation of what we

might call the art of intelligence" (Perkins, 1994, p. 5). Study in the visual arts promotes multiple levels of thinking in all students.

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Appendix A

ARTstor Citations

1. Homer, Winslow, U.S. *The Fox Hunt* 1893

   ARTstor AIC_40030

2. Homer, Winslow, U.S. *The Gulf Stream* 1899

   ARTstor AIC_40031

3. Choki;Japanese, late 18th-early 19th century, Asian; Far East Asian; Japanese

   The Courtesan Tsukasa of Osaka Not Dated Museum of Fine Arts, Boston;Boston, Massachusetts, USA;William S. and John T. Spaulding Collection;21.4769;http://www.mfa.org/

   ARTstor AMICO_BOSTON_103833638

4. Regina Schultz;Possibly by;Unidentified Artist;By;American, 19th century

   Two Parrots on an Oak Tree 1847 Museum of Fine Arts, Boston;Boston, Massachusetts, USA;Gift of Maxim Karolik;56.409;http://www.mfa.org/

   ARTstor AMICO_BOSTON_103838188

5. Breton, Jules, 1827-1906., French. Jeanne Calvet 1865. Sterling and Francine Clark Art Institute.;Williamstown, Mass.;1955.661.;http://www.clarkart.edu

   ARTstor AMICO_CLARK_103903925

6. Cabot, Edward Clarke, 1818-1901., American. *The Levee*;Former title: *Mississippi Levee*. 1866. Sterling and Francine Clark Art Institute.;Williamstown, Mass.;1955.666.;http://www.clarkart.edu ARTstor AMICO_CLARK_103903929

7. Constable, John, 1776-1837., English. Malvern Hall 1821. Sterling and Francine Clark Art Institute.;Williamstown, Mass.;1955.683.;http://www.clarkart.edu ARTstor AMICO_CLARK_103903935

8. Daumier, Honoré, 1808-1879., French. *An Artist* 1818-1879. Sterling and Francine Clark Art Institute.;Williamstown, Mass.;1955.697.;http://www.clarkart.edu ARTstor AMICO_CLARK_103903942

9. Decamps, Alexandre-Gabriel, 1803-1860., French. *Cat, Weasel, and Rabbit* 1836. Sterling and Francine Clark Art Institute.;Williamstown, Mass.;1955.699.;http://www.clarkart.edu ARTstor AMICO_CLARK_103903943

10. Forain, Jean Louis, 1852-1931., French. *Dancer in Her Dressing Room*;Former title: *Danseuse dans sa loge*. 1862-1931. Sterling and Francine Clark Art Institute.;Williamstown, Mass.;1955.738.;http://www.clarkart.edu ARTstor AMICO_CLARK_103903951

11. Goya, Francisco, 1746-1828., Spanish. *Asensio Julià* 1814. Sterling and Francine Clark Art Institute.;Williamstown,

Mass.;1955.83.;http://www.clarkart.edu

ARTstor AMICO_CLARK_103903993

12. Ferneley, John E., 1782-1860., English. *Duchess*;Variant title: *Mr. H. H. Hungerford on his favorite hunter.* 1831. Sterling and Francine Clark Art Institute.;Williamstown, Mass.;1955.924.;http://www.clarkart.edu

ARTstor AMICO_CLARK_103904038

13. Lawrence, Thomas, Sir, 1769-1830., British. *The Hon. Caroline Upton* ca. 1800. Sterling and Francine Clark Art Institute.;Williamstown, Mass.;1955.958.;http://www.clarkart.edu

ARTstor AMICO_CLARK_103904058

14. Legros, Alphonse, 1837-1911., French. *Alfred, Lord Tennyson* 1880s. Sterling and Francine Clark Art Institute. Dept. of Prints, Drawings and Photographs.;Williamstown, Mass.;1988.10.;http://www.clarkart.edu

ARTstor AMICO_CLARK_103906025

15. Mexico, Saltillo, late 19th Century Serape 1880-1890 The Cleveland Museum of Art;Cleveland, Ohio, USA;Gift of J. H. Wade;1921.566;http://www.clemusart.com/

ARTstor AMICO_CL_103798815

16. Africa, Zaire, Kuba Headdress (bwoom) late 19th Century The Cleveland Museum of Art;Cleveland, Ohio, USA;James Albert Ford Memorial Fund;Charles Ratton, Paris

(1935);1935.304;http://www.clemusart.com/

ARTstor AMICO_CL_103799449

17. Africa, Zaire, Kuba Headdress (bwoom) late 19th Century The Cleveland Museum of Art;Cleveland, Ohio, USA;James Albert Ford Memorial Fund;Charles Ratton, Paris (1935);1935.304;http://www.clemusart.com/

ARTstor AMICO_CL_103799452

18. Northwest Coast, Tlingit Face Mask mid-19th Century The Cleveland Museum of Art;Cleveland, Ohio, USA;Purchase from the J. H. Wade Fund;de Menil, Houston; (Sotheby Parke Bernet, Inc., sale #4291, lot #348);1979.83;http://www.clemusart.com/

ARTstor AMICO_CL_103801347

19. Japan, Edo Period (1615-1868) Sleeping Cat: Ko Imari Type 19th century The Cleveland Museum of Art;Cleveland, Ohio, USA;Severance and Greta Millikin Collection;John L. Severance, Cleveland; Severance and Greta Millikin, Cleveland.;1964.255;http://www.clemusart.com/

ARTstor AMICO_CL_103801799

20. India, Pahari Hills, Guler school, 19th Century Krishna Reaching for the Moon c. 1820The Cleveland Museum of Art;Cleveland, Ohio, USA;Andrew R. and Martha Holden Jennings Fund;O.C. Gangoly; John D. MacDonald.;1971.80;http://www.clemusart.com/

ARTstor AMICO_CL_103802063

21. Africa, Ghana, Asante, 19th century Weight for Measuring Gold (mmramoo): Drum with Jaws of Defeated Enemies 1800s The Cleveland Museum of Art;Cleveland, Ohio, USA;Gift of Mr. and Mrs. Alvin N. Haas;1969.266;http://www.clemusart.com/
ARTstor AMICO_CL_103802168

22. Pierre Huard, European; French, 1802 - 1868, (decorated by);Sèvres Factory, European; French, 1802 - 1868, (artist) Cup 1827 The Cleveland Museum of Art;Cleveland, Ohio, USA;Gift of Mr. and Mrs. Derek Ostergard in memory of Mr. and Mrs. Charles Lamson Hoffman;1998.412.a;http://www.clemusart.com/
ARTstor AMICO_CL_103802911

23. Samuel H. Crone, North American; American, 1858 - 1913, (artist) Sarah H. Crone 1880s or 1890s The Cleveland Museum of Art;Cleveland, Ohio, USA;In memory of Sarah H. Crone (nee Voegtly), gift of William S. Huff;1999.36;http://www.clemusart.com/
ARTstor AMICO_CL_103803088

24. America, Pennsylvania, Centre County, Union Furnace, 19th century Coverlet 1837 The Cleveland Museum of Art;Cleveland, Ohio, USA;Gift of Kathryn Stryker Jamieson;2001.246;http://www.clemusart.com/
ARTstor AMICO_CL_103803286

25. Gion Seitoku, Asian; Far East Asian; Japanese, 1781 - 1829?, (artist) Portrait of a Woman 19th century The Cleveland Museum of Art;Cleveland,

Ohio, USA;The Kelvin Smith Collection, given by Mrs. Kelvin Smith;(Kozo Yabumoto, Hyogo, Japan); Kelvin Smith;1985.271;http://www.clemusart.com/ ARTstor AMICO_CL_103803462

26. Mokubei Aoki, Asian; Far East Asian; Japanese, 1767 - 1833, (artist) Tea Container with Plum Blossom Decoration 19th century The Cleveland Museum of Art;Cleveland, Ohio, USA;Bequest of Mrs. Severance A. Millikin;(Mathias Komor, New York); Severance and Greta Millikin, Cleveland, 1976.;1989.265.1.a;http://www.clemusart.com/ ARTstor AMICO_CL_103803575
27. Africa, Ghana, Asante, 19th century Memorial Figure (mma) late 1800s The Cleveland Museum of Art;Cleveland, Ohio, USA;Edwin R. and Harriet Pelton Perkins Memorial Fund;1990.22;http://www.clemusart.com/ ARTstor AMICO_CL_103803995
28. India, Company school, Calcutta, early 19th Century Hoopoe on a Citrus Tree Branch c. 1800The Cleveland Museum of Art;Cleveland, Ohio, USA;John L. Severance Fund;Howard Hodgkin;1990.67;http://www.clemusart.com/ ARTstor AMICO_CL_103804017
29. Yoshitsugu Haizan, Asian; Far East Asian; Japanese, 1846 - 1915, (artist) Album of Landscape Sketches 19th Century The Cleveland Museum of Art;Cleveland, Ohio, USA;Gift of Irene D.

Goldhamer;1997.247;http://www.clemusart.com/

ARTstor AMICO_CL_103804063

30. Paul Cezanne, French, 1839 - 1906 Still Life with Carafe, Milk Can, Coffee Bowl and Orange 1879-82 Dallas Museum of Art;Dallas, Texas, USA;Dallas Museum of Art, The Wendy and Emery Reves Collection;1985.R.10;http://www.dallasmuseumofart.org/

ARTstor AMICO_DALLAS_103842628

31. Pierre-Auguste Renoir, French, 1841 - 1919 The Seine at Chatou 1874 Dallas Museum of Art;Dallas, Texas, USA;Dallas Museum of Art, The Wendy and Emery Reves Collection;1985.R.62;http://www.dallasmuseumofart.org/

ARTstor AMICO_DALLAS_103842682

32. Fang, African; Central African; Gabonese; Fang Mask 19th century The Detroit Institute of Arts;Detroit, Michigan, USA;Founders Society Purchase, New Endowment Fund, General Endowment Fund, Benson and Edith Ford Fund, Henry Ford II Fund, Conrad H. Smith Fund;1983.24;http://www.diorg/

ARTstor AMICO_DETROIT_1039542919

33. Pomo, North American; Native American; Hokan; Pomo Ti Weave Basket middle 19th century The Detroit Institute of Arts;Detroit, Michigan, USA;Founders Society Purchase, Joseph H. Parsons Fund;1994.32;http://www.diorg/

ARTstor AMICO_DETROIT_1039543823

34. Tuareg, African Panel or Cushion Cover early 19th Century The Detroit Institute of Arts;Detroit, Michigan, USA;Gift of Francis Waring Robinson;46.341;http://www.diorg/

    ARTstor AMICO_DETROIT_1039544200

35. Persian, Asian; Middle Eastern; Persian Begging Bowl (Kashkul) 19th century The Detroit Institute of Arts;Detroit, Michigan, USA;Gift of Mr. and Mrs. Carleton W. Brown;76.181;http://www.diorg/

    ARTstor AMICO_DETROIT_1039544405

36. Suzuki Kiitsu, Asian; Far East Asian; Japanese Reeds and Cranes 19th century The Detroit Institute of Arts;Detroit, Michigan, USA;Founders Society Purchase with funds from the Gerald W. Chamberlin Foundation, Inc., Mr. and Mrs. Charles M. Endicott, Mrs. Howard J. Stoddard, Mr. Howard P. Stoddard and Mr. and Mrs. Stanford C. Stoddard;79.28.2;http://www.diorg/

    ARTstor AMICO_DETROIT_1039544437

37. Suzuki Kiitsu, Asian; Far East Asian; Japanese Reeds and Cranes 19th century The Detroit Institute of Arts;Detroit, Michigan, USA;Founders Society Purchase with funds from the Gerald W. Chamberlin Foundation, Inc., Mr. and Mrs. Charles M. Endicott, Mrs. Howard J. Stoddard, Mr. Howard P. Stoddard and Mr. and Mrs. Stanford C. Stoddard;79.28.1;http://www.diorg/

    ARTstor AMICO_DETROIT_1039544572

38. Masanao II (Miyake);Japan, 1848-1922 Monkeys and Wasp late 19th-early 20th century Los Angeles County Museum of Art;Los Angeles, California, USA;Raymond and Frances Bushell Collection;AC1998.249.27;http://www.lacma.org/ ARTstor AMICO_LACMA_103886436
39. Hokkyo Sessai;Japan, 1820-1879 Snake mid-19th century Los Angeles County Museum of Art;Los Angeles, California, USA;Raymond and Frances Bushell Collection;AC1998.249.41;http://www.lacma.org/ ARTstor AMICO_LACMA_103886442
40. Kaigyokusai (Masatsugu);Japan, 1813-1892 Sleeping Cat mid- to late 19th century Los Angeles County Museum of Art;Los Angeles, California, USA;Raymond and Frances Bushell Collection;AC1998.249.80;http://www.lacma.org/ ARTstor AMICO_LACMA_103886461
41. Ohara Mitsuhiro;Japan, 1810-1875 Preening Duckmid-19th century Los Angeles County Museum of Art;Los Angeles, California, USA;Raymond and Frances Bushell Collection;AC1998.249.82;http://www.lacma.org/ ARTstor AMICO_LACMA_103886463
42. Kobayashi Kiyochika;Japan, Tokoyo, 1847-1915 Tiger and Lightning late 19th century Los Angeles County Museum of Art;Los Angeles, California, USA;Gift of Carl Holmes;M.71.100.44;http://www.lacma.org/ ARTstor AMICO_LACMA_103886513

43. Okamoto Shuki;Japan, 1807 (?)-1862 Pictures of Flowers and Birds 19th century Los Angeles County Museum of Art;Los Angeles, California, USA;Far Eastern Art Council Fund;M.85.99;http://www.lacma.org/ ARTstor AMICO_LACMA_103887094
44. Okamoto Shuki;Japan, 1807 (?)-1862 Pictures of Flowers and Birds 19th century Los Angeles County Museum of Art;Los Angeles, California, USA;Far Eastern Art Council Fund;M.85.99;http://www.lacma.org/ ARTstor AMICO_LACMA_103887095
45. Okamoto Shuki;Japan, 1807 (?)-1862 Pictures of Flowers and Birds 19th century Los Angeles County Museum of Art;Los Angeles, California, USA;Far Eastern Art Council Fund;M.85.99;http://www.lacma.org/ ARTstor AMICO_LACMA_103887097
46. Kenya;Japan, Kyoto, active 1825-1889 Dog-Shaped Box mid-19th century Los Angeles County Museum of Art;Los Angeles, California, USA;Raymond and Frances Bushell Collection;M.87.263.63;http://www.lacma.org/ ARTstor AMICO_LACMA_103887136
47. Matsushita Otoman;Japan, Hakata, Kyushu, active early to mid-19th century Tiger early to mid-19th century Los Angeles County Museum of Art;Los Angeles, California, USA;Raymond and Frances Bushell Collection;M.90.186.19;http://www.lacma.org/ ARTstor AMICO_LACMA_103887174

48. Gyokuzan;Japan, active early 19th century Octopus early 19th century Los Angeles County Museum of Art;Los Angeles, California, USA;Raymond and Frances Bushell Collection;M.91.250.152;http://www.lacma.org/ ARTstor AMICO_LACMA_103887201
49. Kaigyokusai (Masatsugu);Japan, 1813-1892 Rabbit Pair mid- to late 19th century Los Angeles County Museum of Art;Los Angeles, California, USA;Raymond and Frances Bushell Collection;M.91.250.217;http://www.lacma.org/ ARTstor AMICO_LACMA_103887213
50. Ohara Mitsuhiro;Japan, 1810-1875 Pigeon-Shaped Flute mid-19th century Los Angeles County Museum of Art;Los Angeles, California, USA;Raymond and Frances Bushell Collection;M.91.250.235;http://www.lacma.org/ ARTstor AMICO_LACMA_103887214
51. Hoichi;Japan, 1829-1879 Tiger Doll mid- to late 19th century Los Angeles County Museum of Art;Los Angeles, California, USA;Raymond and Frances Bushell Collection;M.91.250.261;http://www.lacma.org/ ARTstor AMICO_LACMA_103887222
52. Kano Tomokazu;Japan, circa 1764/71-circa 1830/43 Wild Boar Pair early 19th century Los Angeles County Museum of Art;Los Angeles, California, USA;Raymond and Frances Bushell

Collection;M.91.250.335;http://www.lacma.org/

ARTstor AMICO_LACMA_103887237

53. Kaigyokusai (Masatsugu);Japan, 1813-1892 Floating Cranemid- to late 19th century Los Angeles County Museum of Art;Los Angeles, California, USA;Raymond and Frances Bushell Collection;M.91.250.339;http://www.lacma.org/

ARTstor AMICO_LACMA_103887238

54. Namikawa Yasuyuki;Japan, 1845-1927 Vase 19th century Los Angeles County Museum of Art;Los Angeles, California, USA;Gift of Mr. and Mrs. Eugene Tosk;M.91.251.1;http://www.lacma.org/

ARTstor AMICO_LACMA_103887255

55. Torres Strait Islander people Mask 19th century The Metropolitan Museum of Art;New York, New York, USA;The Michael C. Rockefeller Memorial Collection, Purchase, Nelson A. Rockefeller Gift, 1967;1978.412.1510;http://www.metmuseum.org

ARTstor AMICO_METRO_103825482

56. Kingdom of Bamum Helmet Mask 19th century The Metropolitan Museum of Art;New York, New York, USA;The Michael C. Rockefeller Memorial Collection, Purchase, Nelson A. Rockefeller Gift, 1967;1978.412.560;http://www.metmuseum.org

ARTstor AMICO_METRO_103825502

57. Made by Wedgwood (Josiah Wedgwood and Sons) Portland Vase 19th century (ca. 1840-60) The Metropolitan Museum of Art;New York, New

York, USA;Gift of Henry G. Marquand,

1894;94.4.172;http://www.metmuseum.org

ARTstor AMICO_METRO_103826881

58. India Pouch 19th century The Minneapolis Institute of Arts;Minneapolis, Minnesota, USA;Bequest of Miss Lily Place;30.23.73;http://www.artsmia.org/

ARTstor AMICO_MINIAPOLIS_103820079

59. artist unknown Square Shawl 19th century The Minneapolis Institute of Arts;Minneapolis, Minnesota, USA;Gift of Mrs. C.C. Bovey;42.47.9;http://www.artsmia.org/

ARTstor AMICO_MINIAPOLIS_103820148

60. Albert Bierstadt, North American; American, 1830 - 1902, (painter) Landscape 19th century The Minneapolis Institute of Arts;Minneapolis, Minnesota, USA;Gift of Mrs. Florence Cornell K. Gale;61.51;http://www.artsmia.org/

ARTstor AMICO_MINIAPOLIS_103820431

61. Acoma Pueblo Ceramic jar 19th century The Minneapolis Institute of Arts;Minneapolis, Minnesota, USA;Gift of Mr.and Mrs. Wayne H. MacFarlane;86.54;http://www.artsmia.org/

ARTstor AMICO_MINIAPOLIS_103822137

62. Wu Changshuo, Asian; Far East Asian; Chinese, 1844 - 1927, (artist);Zhang Bingling, Asian; Far East Asian; Chinese, (calligrapher) Pomegranates late 19th century The Minneapolis Institute of Arts;Minneapolis,

Minnesota, USA;Gift of Ruth and Bruce Dayton;98.169.1;http://www.artsmia.org/ ARTstor AMICO_MINIAPOLIS_103823629

63. Taki Katei, Asian; Far East Asian; Japanese, (Painter) Lotus in Bloom 19th century The Minneapolis Institute of Arts;Minneapolis, Minnesota, USA;The Mitchell Hutchinson Collection gift of Ruth and Bruce Dayton;98.18.12;http://www.artsmia.org ARTstor AMICO_MINIAPOLIS_103823638

64. Miao, Asian; Far East Asian; Chinese, (weavers) Comforter cover 19th century The Minneapolis Institute of Arts;Minneapolis, Minnesota, USA;Gift of Joan Wurtele;98.215.3;http://www.artsmia.org/ ARTstor AMICO_MINIAPOLIS_103823713

65. Yombe Mask 19th century The Minneapolis Institute of Arts;Minneapolis, Minnesota, USA;Gift of Bob Ulrich, Darwin Reedy and the Regis Foundation;99.165;http://www.artsmia.org/ ARTstor AMICO_MINIAPOLIS_103824044

66. Maya, North American; Central American; Guatemalan, (sculptor) Mask of a Spanish Conquistador 19th century The Minneapolis Institute of Arts;Minneapolis, Minnesota, USA;The Paul C. Johnson, Jr. Fund;99.3.2;http://www.artsmia.org/ ARTstor AMICO_MINIAPOLIS_103824110

67. artist unknown Blouse late 19th century The Minneapolis Institute of Arts;Minneapolis, Minnesota, USA;Gift of Lura and Philip

Backer;99.60.3;http://www.artsmia.org/

ARTstor AMICO_MINIAPOLIS_103824152

68. Thomas Eakins, American, 1844 - 1916 The Concert Singer 1890-92 Philadelphia Museum of Art;Philadelphia, Pennsylvania, USA;Gift of Mrs. Thomas Eakins and Miss Mary Adeline Williams, 1929;1929-184-19;http://www.philamuseum.org/main.asp

ARTstor AMICO_PHILADELPHIA_103882514

69. Unidentified, North American; American, n.d., (Artist) Merganser Drake Decoy 19th century Smithsonian American Art Museum;Washington, DC, USA;Gift of Herbert Waide Hemphill, Jr. and museum purchase made possible by Ralph Cross Johnson;1986.65.66;http://americanart.si.edu/index3.cfm

ARTstor AMICO_SAAM_103811260

70. Unidentified, North American; American, n.d., (Artist) Perch Decoy late 19th century Smithsonian American Art Museum;Washington, DC, USA;Gift of Herbert Waide Hemphill, Jr. and museum purchase made possible by Ralph Cross Johnson;1986.65.48;http://americanart.si.edu/index3.cfm

ARTstor AMICO_SAAM_103812873

71. Unknown Poro society mask hornbill form 19th century Fine Arts Museums of San Francisco;San Francisco, California, USA;Gift of the Museum Society Auxiliary;73.9;http://www.thinker.org/

ARTstor AMICO_SAN_FRANCISCO_103844210

72. Louis-Antoine-Leon Riesener, European; French, 1808 - 1878 Landscape 19th century Fine Arts Museums of San Francisco;San Francisco, California, USA;Achenbach Foundation for Graphic Arts purchase, anonymous gift, Robert J. Bransten, Innis Bromfield, Ludwig A. Emge, Albert Morch and George A. Poole Jr. Funds and others;1983.2.13;http://www.thinker.org/ ARTstor AMICO_SAN_FRANCISCO_103851409

73. Kobi, Asian; Far East Asian; Japanese, active 19th century Two Rabbits 19th century Fine Arts Museums of San Francisco;San Francisco, California, USA;Gift of Ms. Elizabeth Danechild;1988.2.88;http://www.thinker.org/ ARTstor AMICO_SAN_FRANCISCO_103854848

74. Anonymous Untitled (copy of an early 19th century color woodcut) circa 1890 Fine Arts Museums of San Francisco;San Francisco, California, USA;Gift of Marguerite and John Ihle;1991.1.177;http://www.thinker.org/ ARTstor AMICO_SAN_FRANCISCO_103857147

75. Anonymous Composite Camel 19th century Fine Arts Museums of San Francisco;San Francisco, California, USA;Achenbch Foundation for Graphic Arts;1963.24.694;http://www.thinker.org/ ARTstor AMICO_SAN_FRANCISCO_103860895

76. Cassatt, Mary, 1844-1926 Woman and Child Driving 1879
Philadelphia Museum of Art
ARTstor ARTSTOR_103_41822000199206

77. Audubon, John James, 1785-1851 Black-billed Cuckoo 1827-1838
ARTstor ARTSTOR_103_41822000882694

78. Blakelock, Ralph Albert, 1847-1919 Moonlight c.1885 Brooklyn Museum of ArtARTstor ARTSTOR_103_41822000884906

79. Eakins, Thomas, 1844-1916 Lady with Setter Dog 1885 Metropolitan Museum of Art (New York, N.Y.)
ARTstor ARTSTOR_103_41822000909034

80. Homer, Winslow, 1836-1910 Canoe in Rapids 1897
ARTstor ARTSTOR_103_41822000927978

81. Ryder, Albert Pinkham, 1847-1917 Moonlit Cove c.1890-1900
ARTstor ARTSTOR_103_41822001163227

82. Sully, Thomas, 1783-1872 Passage of Washington at the Delaware 1819
ARTstor ARTSTOR_103_41822001169190

83. Homer, Winslow, 1836-1910. The Life Boat ca. 1881. Cooper-Hewitt Museum.
ARTstor CARNEGIE_3000002

84. Audubon, John James, 1785-1851. American porcupine 1842.
American Museum of Natural History.
ARTstor CARNEGIE_3920003

85. Bingham, George Caleb, 1811-1879. Daniel Boone escorting a band of pioneers ca. 1851. Washington University (Saint Louis, Mo.)

ARTstor CARNEGIE_3940005

86. Cassatt, Mary, 1844-1926. Mother and child 1890. Wichita Art Museum.

ARTstor CARNEGIE_3960001

87. Cassatt, Mary, 1844-1926. Woman arranging her veil ca. 1890. Philadelphia Museum of Art.

ARTstor CARNEGIE_3960003

88. Eakins, Thomas, 1844-1916. Walt Whitman 1887. Pennsylvania Academy of the Fine Arts.

ARTstor CARNEGIE_4030007

89. Homer, Winslow, 1836-1910. Adirondacks 1892. Fogg Art Museum.

ARTstor CARNEGIE_4100006

90. Homer, Winslow, 1836-1910. Northeaster 1895. Metropolitan Museum of Art (New York, N.Y.)

ARTstor CARNEGIE_4110002

91. Peale, Raphaelle, 1774-1825. Still life ca. 1820. Toledo Museum of Art.

ARTstor CARNEGIE_4220007

92. Peale, Rembrandt, 1778-1860. Thomas Jefferson 1805. New-York Historical Society.

ARTstor CARNEGIE_4230003

93. Peale, Rubens, 1784-1865. Two grouse in an underbrush of Laurel 1864. Detroit Institute of Arts.

ARTstor CARNEGIE_4230006

94. Ryder, Albert Pinkham, 1847-1917. Moonlit cove late 1880s or 1890s.

ARTstor CARNEGIE_4250002

95. Sargent, John Singer, 1856-1925. The daughters of Edward Darley Boit;Four daughters of Edward D. Boit 1882. Museum of Fine Arts, Boston.

ARTstor CARNEGIE_4270005

96. Sully, Thomas, 1783-1872. Mary Sicard David 1813. Cleveland Museum of Art

ARTstor CARNEGIE_4290004

97. Cole, Thomas, 1801-1848. The oxbow (the Connecticut River near Northampton) 1846. Metropolitan Museum of Art (New York, N.Y.)

ARTstor CARNEGIE_4390002

98. Robinson, Theodore, 1852-1896. The vale of Arconville ca. 1888.

ARTstor CARNEGIE_4520004

99. Robinson, Theodore, 1852-1896. The watering pots 1890. Brooklyn Museum of Art.

ARTstor CARNEGIE_4520005

100. Gainsborough, Thomas, 1727-1788. After. Portrait a Woman. c.1800

Location unknown.

ARTstor NGA_REALI_1039653713

Appendix B

Note: Data will be anonymous and confidential, and results will be reported as group scores and trends. All data will be paired by name and random code number, and the names will be removed after the documents have been sorted for each student. I will store all records, including consent forms for seven (7) years, and then destroy all identifying records.

SESSION ONE: Part One

Have you been to a museum?	Yes	No
Have you been to an art museum?	Yes	No
Have you seen an art show?	Yes	No

What might you see at a museum?

What might you see at an art museum?

What kind of art might you see?

Taxonomy Coding
1.

Do you or does someone you know collect anything? Yes No

What do they collect?

Taxonomy Coding
2.

Knowing what a collection is, what is an art collection?

Who collects art?

Taxonomy Coding
3.

SESSION ONE: Part Two
Instructions:
You have the opportunity to create an art collection of your very own. Here you have 100 images to choose from. You may choose between 10 and 25 artworks. Within this framework there are no restrictions on the group of artworks you select. When you are done making your selections, you will be asked you a series of questions about your choices.
Tell me about your collection.

How did you classify these images?

What would you say these images have in common?

How are these images similar?

Taxonomy Coding
4.

How are they different?

Can you tell me how these images connect?

Tell me about the relationships between these images?

Taxonomy Coding
5.

Why did you choose to exclude certain images?

Why do these images not fit into your scheme?

Do any adjustments need to be made to your collection? Yes No

You may make any adjustments to your collection at this time.

Taxonomy Coding
6.

Please record the numbers of the images you have chosen in the space below.

Thank you.

When you have finished working with your collection and answering this questionnaire, please give your image collection, the remaining images, and your questionnaire to Ms. Turrell.

Ms. Turrell will schedule one more session with you this week.

SESSION TWO: Part One

Instructions: Please take a look at the choices you made in your last session. You also have access to the images you did not choose. Please take another look.

Do any adjustments need to be made to your collection? Yes No
(If yes, make any changes.)
Which ones did you add? *(Please write down image numbers.)*

Why did you make these choices?

Which ones did you subtract? *(Please write down image numbers.)*

Why did you make these choices?

Taxonomy Coding
7.

SESSION TWO: Part Two
Instructions: Revisit your images. There is not enough space in your gallery for all of the images you have chosen. You must remove at least five images.
Which images did you remove? *(Please write down numbers.)*

Tell me about your revised collection.

Taxonomy Coding
8.

Which image is the most important in your collection? *(Please describe image and record the image number.)*

Taxonomy Coding
9.

Why is this the most important work?

Taxonomy Coding
10.

How does this work define the exhibition as a whole?

Without using your name, what would be the title of your collection?

Taxonomy Coding
11.

Thank you.
When you have finished working with your collection and answering this questionnaire, please give your final image collection, the remaining images, and your questionnaire to Ms. Turrell.

Examining the Relationship Between Gender, Attitude, Self-Discipline, and Reading Achievement Among Fourth-Grade Boys and Girls

Julia Wiedmer

Education 590, Fall 2007

The University of Tennessee at Chattanooga

The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149) has approved this research project 08-061.

Introduction to the Problem

Much attention has recently been focused on the notion that boys all across the United States are struggling academically. The cover of the January 30, 2006 issue of *Newsweek* is emblazoned with the headline "The Boy Crisis" and features a photo of four brooding-looking young boys. Inside the magazine, Tyre (2006) reports that boys are falling behind at every level. She notes that the problem may relate to how much less efficiently boys use their brains than girls. Davis (2007) reports that some researchers believe girls are more self-disciplined than boys, and that this attribute contributes to academic achievement. On the other hand, Greifner (2006) reports that research shows boys are actually making substantial progress, but girls are just making progress faster. So what is one to believe? Are boys really struggling? If so, does self-discipline have something to do with their difficulties? Or, are girls simply progressing by such leaps and bounds that the boys pale by comparison? The debate is likely to continue for some time. However, this case study will look specifically at gender, and, what, if any, role it plays in a child's level of self-discipline, attitude toward school and reading, and, ultimately, reading achievement.

Review of Literature

Is There a Crisis?

Taylor (2005, p. 292) reports that male students are not progressing at the rate of female students, and, in fact, lag behind them by more than one year:

> The latest national test scores show that girls have met or exceeded the reading performance of boys at all age levels. The NAEP reveals that the gap observed

> between reading scores of fourth-grade males and females in previous years continues to be significant and was larger in 2000 than in 1998.

"Female students outperformed male students by 10 points in 2000, regardless of whether accommodations were permitted" (Donahue, Finnegan, Lutkus, Allen, & Campbell, 2001, p. 70). This gender gap in literacy is equivalent to about one and a half years of school (Gurian, 1998).

Mead (2006) cautions that the recent wave of media attention focused on the boy crisis is based on fears, rather than on evidence, and that it is not beneficial to either boys or girls. She cites evidence from the National Assessment of Educational Progress (NAEP), also known as "The Nation's Report Card:"

> The most recent main NAEP assessment in reading, administered in 2005, does not support the notion that boys' academic achievement is falling. In fact, fourth-grade boys did better than they had done in both the previous NAEP reading assessment, administered in 2003, and the earliest comparable assessment, administered in 1992. Scores for both fourth- and eighth-grade boys have gone up and down over the past decade, but results suggest that the reading skills of fourth- and eighth-grade boys have improved since 1992. (Mead, 2006, p. 4)

Regarding older boys, Mead says the results are not quite as encouraging. She notes that this group actually experienced a decline:

> The picture is less clear for older boys. The 2003 and 2005 NAEP assessments included only fourth- and eighth-graders, so the most recent main NAEP data for 12th-graders dates back to 2002. On that assessment, 12th-grade boys did worse than they had in both the previous assessment, administered in 1998, and the first

> comparable assessment, administered in 1992. At the 12th-grade level, boys' achievement in reading does appear to have fallen during the 1990s and early 2000s. (Mead, 2006, p. 4)

Brown, Chesney-Lind, and Stein (2006) also take issue with the way the debate over the alleged boy crisis is being handled:

> There are legitimate concerns about boys' achievement. But there are also legitimate concerns about the way the current discussion is being framed. Headlines repeatedly pit girls against boys, and accompanying photos often show boys with hurt expressions, looking dejected, slumped over their desks. The girls who surround them in these pictures are caught mid-laugh, whispering to a friend, sitting atop the monkey bars, or staring at the camera with defiant self-confidence. The message is not only that girls are doing great and boys are suffering. It's also that the girls are cocky about it, mean, and satisfied with the situation. (Brown, Chesney-Lind, & Stein, 2006, p. 35)

Cavazos-Kottke (2005) believes there is a crisis, and relates it to the tendency of classroom teachers to reject the kinds of literacy activities that appeal to boys. He reflects on his experience teaching high school boys:

> Few, if any, of the boys would identify themselves as readers, even in private conversation, despite the fact that their back-packs were often overflowing with magazines, newspapers, and text-heavy printouts from the Internet. (Cavazos-Kottke, 2005, p. 182)

Williams (2004) makes similar assertions to those of Cavazos-Kottke. She bases her claims on her experiences with her two sons, once both avid readers, who were

discouraged by their teacher from reading or writing on the topics that interested them most:

> On one hand, I support the teacher's goal: to get her students to write in new genres and forms as well as to consider that conflict need not always be resolved by laser blasts and space torpedoes, let alone handguns and cruise missiles. And yet, I also see in her student, and others like him, a creative, passionate writer who is being told, explicitly and implicitly, that the reading and writing he is drawn to not only has no value but is also potentially dangerous. It makes me wonder if at some point he will become one of those adolescents who remembers loving reading and writing as a child and losing that passion during middle and high school. (Williams, 2004, p. 511)

Cavazos-Kottke decided to implement a self-selected reading program, in which his students could select anything they wanted to read:

> Of all the modifications I made to the program, the most enthusiastically received was the elimination of all general restrictions on what would count as reading for S-SR, as well as any requirements that certain genres be included in students' reading over the course of the year. (Cavazos-Kottke, 2005, p. 182)

Differences Between Boys and Girls

Van Duzer (2006) reports that boys have long had problems with school because of the prevalence of female teachers and the resulting "feminization" of education. He notes that boys tend to be active, competitive, and boisterous. He explains that these male these traits do not work well in a traditional school setting, which is more orderly, sedentary, and reserved.

Davis (2007) suggests that more research should focus on the attribute of self-discipline. To support her idea, she notes that, despite the fact that boys often score higher on IQ or achievement tests, they typically get lower grades than girls do in elementary, middle, and high school. One explanation Davis presents is that boys tend to study less because they think they know the material, whereas girls study more because they are less confident in their knowledge. Another explanation is that being a good student is more important to girls than to boys. She also reports on a study done by Duckworth and Seligman of the University of Pennsylvania. Duckworth and Seligman surveyed students, parents, and teachers, all of whom described girls as being more self-disciplined than boys.

Data Collection and Results

Data Collection

Subjects

The subjects of this investigation were students in the fourth-grade classes at a Title I-classified rural elementary school in Georgia. All of the approximately 150 students in the seven, fourth-grade classes were given the opportunity to participate in the study. A total of 55 parents consented to having their child participate. Each of those students, in turn, agreed to take part. Of the 55 subjects, 33 were male, and 22 were female.

Methodology

Students were taken by the principal investigator, individually, from their classrooms, into the hall. She explained to them that she was trying to learn what children think about certain things, and that she wanted to ask them some questions. She assured

them that whatever they told her would remain “a secret,” that she would not tell their teacher, friends, or family anything that they said, and that there were no wrong answers.

The principal investigator began by first conducting a nine-question survey (see Appendix A) to evaluate participants’ attitudes toward reading, and school, in general. She administered the survey orally to each child. During this same one-on-one session, each child was then administered a one-question test intended to measure his or her level of self-discipline. The test consisted of the investigator offering the child the option of receiving “one treat today” or “three treats tomorrow.” She pointed to a grocery bag full of assorted candy, and explained to the participants that they could decide whether they would like to take one piece right then and there, or wait until the next day to take three. She assured them that she did not care which option they chose. The reasoning behind this particular test was that children with a lower level of self-discipline might opt for immediate gratification, rather than having the discipline to wait longer for a greater reward. Students’ responses to the survey and the self-discipline test were recorded on the one-page research instrument.

Following this interactive portion of the study, the investigator met individually with each participant’s teacher. She asked the teachers to categorize each participant as possessing average or below-average self-discipline. The teachers were not provided any of the student survey data, all of which was kept confidential. Rather, they were asked to base their assessments solely on their own knowledge of the participants, and observations of them in the daily school setting. The investigator recorded the teachers’ responses on the research instrument.

The final piece of data collection involved reviewing each participant's reading scores on the 2006 Georgia Criterion Referenced Competency Test (CRCT), as well as their oral reading fluency scores on the 2006 Dynamic Indicators of Basic Early Literacy Skills (DIBELS) test. A student's performance on the CRCT leads to their being assigned to one of three classifications: Does Not Meet Expectations for Grade Level, Meets Expectations for Grade Level, or Exceeds Expectations for Grade Level. Similarly, the DIBELS assessment classifies examinees as being At Risk, Some Risk, or Low Risk.

Results

Attitude

Several of the survey questions revealed no difference between boys and girls. When asked whether they thought school was important, whether they had a good teacher, whether their teacher liked them, and whether they believed themselves to be smart, every participant answered affirmatively. However, when asked whether they liked school and whether they liked reading, differences between the genders did appear. School and reading appealed to a smaller percentage of boys than girls (see Figure 1).

	Like School	**Do Not Like School**	Like to Read	**Do Not Like to Read**
Boys	76%	**24%**	61%	**39%**
Girls	91%	**9%**	73%	**27%**

Figure 1. Attitudes of fourth grade boys and girls toward school and reading.

Self-Discipline

When asked to categorize participants as possessing average or below-average levels of self-discipline, teachers reported a higher percentage of boys in the latter category than girls (see Figure 2).

	Teacher Classifies Below-Average Self-Discipline	Teacher Classifies Average Self-Discipline
Boys	**36%**	64%
Girls	**9%**	91%

Figure 2. Teachers' classifications of levels of self-discipline in fourth grade boys and girls.

The results of the self-discipline test involving the one-treat option and three-treat option did not positively correlate to the teachers' assessments of this personality trait. In other words, the theoretically lower-self-disciplined option of one treat today corresponded to a participant's being labeled by their teacher as possessing below-average self-discipline a relatively low percentage of the time (see Figure 3). For this reason, the teachers' classifications alone will be utilized in drawing conclusions.

	"One Treat Today"
Boys with Below-Average Self-Discipline	33%
Girls with Below-Average Self-Discipline	17%

Figure 3. Participants classified by teachers as possessing low self-discipline who also opted for "one treat today."

Test Scores

Participants' scores on the CRCT and DIBELS tests do not reveal a clear relationship between gender and performance. A larger percentage of girls than boys were classified as Not Meeting Expectations for Grade Level on the CRCT. On the other hand, a slightly higher percentage of boys than girls were classified as At Risk by the DIBELS assessment. When the DIBELS categories of At Risk and Some Risk are considered collectively, the percentage of boys and girls is nearly identical (see Figure 4).

	Does Not Meet CRCT Expectations	DIBELS At Risk	DIBELS Some Risk
Boys	6%	21%	36%
Girls	18%	18%	41%

Figure 4. Fourth graders found by formal assessments to be below grade level or at some risk.

Attitude and Test Scores

Boys who do not like school did not suffer any consequences on the CRCT; however, a fairly large percentage of them were classified as At Risk or Some Risk on the DIBELS assessment. Their attitudes toward reading also had a fairly low correlation to negative outcomes on the CRCT, but, again, seemed to strongly correlate to being At Risk or Some Risk on the DIBELS test. Girls who do not like school number so few that they were not considered in this particular category. However, a significant percentage of those who do not like to read scored poorly on the CRCT and DIBELS assessments (see Figure 5).

	CRCT Does Not	DIBELS At Risk	DIBELS Some Risk

	Meet Expectations		
Boys Who Do Not Like School	0%	13%	50%
Boys who Do Not Like Reading	13%	38%	38%
Girls Who Do Not Like Reading	33%	33%	50%

Figure 5. Relationship between attitude and scores on formal reading assessments among fourth graders.

Self-Discipline and Test Scores

Interestingly, two variables that seem to correlate very little are a participant's level of self-discipline and their performance on the two formal reading assessments (see Figure 6). On the CRCT, almost all of the boys described as having below-average self-discipline were classified as Meeting or Exceeding Expectations for Grade Level. Similarly, all of the girls labeled with below-average self-discipline were classified as Meeting Expectations. On the DIBELS assessment, half of the boys and girls with low self-discipline scored high enough to be classified as Low Risk.

	CRCT Does Not Meet Expectations	CRCT Meets Expectations	CRCT Exceeds Expectations	DIBELS At Risk	DIBELS Some Risk	DIBELS Low Risk
Boys with Average Self-Discipline	5%	48%	48%	24%	38%	38%

Girls with Average Self-Discipline	20%	50%	30%	20%	40%	40%
Boys with Below-Average Self-Discipline	8%	50%	42%	17%	33%	50%
Girls with Below-Average Self-Discipline	0%	100%	0%	0%	50%	50%

Figure 6. Relationship between teacher-assessed self-discipline and scores on formal reading assessments.

Conclusions and Recommendations

Conclusions

Based on the results of this study, gender alone does not appear to negatively impact reading achievement. However, gender does appear to play a role in students' attitudes toward school and reading. Boys appear more likely to dislike school and reading than girls do. Unfortunately, this negative attitude appears to increase the likelihood that a child will do poorly in reading.

Gender also appears to be related to a student's level of self-discipline. Boys are more likely than girls to be described by their teachers as having below-average self-discipline. While this may frustrate the teachers, the good news is that this lower-than-

average self-discipline does not appear to negatively impact a student's reading achievement.

The message buried within all of this data seems to be that attitude is extremely important. If educators want to help their students become better readers, a good starting point could be figuring out how to improve those students' attitudes toward school and reading. Why don't as many boys as girls like school? Why do more girls than boys like to read? The investigator thinks the suggestions by some researchers to use more self-selected reading, and even to offer students more choices when it come to all sorts of assignments, could be a good starting point.

Recommendations

While neither the National Council of Teachers of English (NCTE) nor the International Reading Association (IRA) has issued a formal position statement specifically addressing gender as it relates to reading achievement, both organizations support reading instruction that engages all students. In its position statement entitled Excellent Reading Teachers, the IRA (2000) describes the kinds of reading materials utilized by the best teachers:

> They are aware of the reading abilities and interests of the children, and they constantly provide a selection of books that will be both interesting to the children and within the children's reading capabilities. Excellent reading teachers are familiar with children's literature. They include a wide variety of fiction and nonfiction genres (such as storybooks, novels, biographies, magazines, and poetry). (IRA, 2000, ¶ 8)

The NCTE (2004) takes a similar position, stating that the most effective reading instruction occurs when teachers take note of their students' individual interests and attitudes toward reading. Not surprisingly, the NCTE asserts that children read more when the topics interest them. Accordingly, the Council recommends providing students daily opportunities to read books of their own choosing.

In light of these positions and the results of this case study, the researcher recommends teacher professional development that provides training in the best practices of reading instruction. The NCTE (2007) Reading Initiative is a long-term program intended to create a nationwide network of skilled literacy professionals. Whether teachers opt for this type of professional development, or, in the alternative, complete training in any number of the research-based reading programs on the market, the researcher strongly encourages educators to seek out and use information about the interests and experiences of individual readers in order to make reading a fun, meaningful experience for each student.

In order to further explore the gender-reading connection, future researchers might examine whether different types of reading materials have a broad appeal to one gender as opposed to the other. The IRA awards several grants for research into reading and literacy (2007a, 2007b). The Elva Knight Research Grant and the Teacher as Researcher Grant are two such funding possibilities. Information on the application process is available on the IRA website at www.ira.org.

Finally, technology seems to be playing an ever-expanding role in just about every aspect of education. At the risk of making a sweeping generalization, the researcher wonders if this could well be a key component to engaging students of both genders in

reading. Where young people 10 years ago seemed glued to the television, their counterparts of today often spend their time in front of a computer screen or talking on a cell phone. This always-wired mentality could lend itself to different ways of enhancing reading achievement. If, as literacy education programs tell us, the best way to build vocabulary and improve fluency and, thereby, comprehension is to read often and on a wide range of topics, then perhaps we should stop trying to coax young people away from their computer screens. Instead, maybe a more innovative approach would be to take advantage of the fact that they are a captive audience, and to recognize their Internet explorations as legitimate reading. In addition, young people's propensity toward using email and text messages to communicate with one another could also provide another opportunity to make reading appealing.

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Appendix A

Research Instrument

Examining the Relationship Between Gender, Attitude, Self-Discipline, and Reading Achievement Among Fourth-Grade Boys and Girls

Investigator: Julia Wiedmer

Subject Name: _____

Gender

Male Female

Test Scores

CRCT Reading _____ DIBELS _____

Survey

1. Do you like school?	Yes	No
2. Do you think school is important?	Yes	No
3. Do you have a good teacher?	Yes	No
4. Does your teacher like you?	Yes	No
5. Do you think you are smart?	Yes	No
6. Do you like to read?	Yes	No
7. (If "yes" to No. 6) What do you like to read about? _____		
8. Do you read for fun?	Yes	No
9. Do you have books of your own at home?	Yes	No

Self-Discipline

Test*: one treat today three treats tomorrow

Teacher's Assessment: average below average

Notes

The subject's name on this form will be redacted after data has been collected and paired. At that point, the subject will be identified only by a randomly-selected code number.

The survey and self-discipline test will be administered orally by the investigator to each student in a one-on-one setting.

*Adapted from a self-discipline test designed by Martin E. P. Seligman and Angela Lee Duckworth of the University of Pennsylvania.

The Impact of Explicit Pre-Reading Lessons on Reading Comprehension Tests

Rashaad A. Williams

Education 590, Fall 2007

The University of Tennessee at Chattanooga

The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149) has approved this research project 08-068.

Introduction to the Problem

Today, educators have the daily opportunity to be engaged in new initiatives and strategies as related to academic developments and pedagogy. It really does not take much observation in schools to see the creativity and ingenuity that teachers display daily in transferring information. Nationwide, creative ideas and teaching beliefs are entering the classroom. New and improved classroom management techniques and techniques of instruction are being tested and tried daily. Teachers must balance diversity in learning styles, culture, ethnic background, economic status, color, and academic ability without bias. While managing so many tasks can seem tiring and cumbersome, the thrill of being involved in a field that constantly seeks to better itself is exhilarating.

Reading is a great concern in the United States. Students who do not read well are often left behind in many aspects of life. In fact, as adults, these previous students become community economic burdens. Something must done to deter the aforementioned. In response to this growing concern, many new strategies to ensure successful reading acquisition have arisen. Yes, it is great that so many new strategies and ideas are being tested and tried to ensure success for all students, especially in reading. Yes, it is awesome, that the United States deems it important that all children receive an adequate, efficient, and sufficient education; in addition, they should all read well. Moreover, it is stimulating to be on the brink of such cutting edge academic, reading, instructional strategies. Unfortunately, with so many new strategies, ideas, and philosophies arising, the effectiveness of some traditional reading instruction methods are questioned and left unpracticed. With the implementation of so many new reading strategies, are the traditional reading instructional methods ineffective? In other words,

do explicitly taught pre-reading lessons help a student better perform on reading comprehension test?

Review of Literature

Reading is essential to academic success in all subjects. Reading is the one subject that affects student performance across the board. The literature is plentiful, with regard to reading, especially on the elementary level. There is plenty of material, with regard to reading, in the secondary classroom. However, the professional literature on the impact of pre-reading in the elementary and secondary classrooms seems to be very limited. Although literature that specifically addresses explicit pre-reading lessons is limited, some conclusions can be drawn about pre-reading effectiveness related to other strategies used for the reading acquisition process.

The method by which a teacher teaches reading in the elementary classroom is very much prescribed, and many times dictated, by school districts. These prescriptions are not always used on the secondary level. In most cases, these methods prove effective; however, there are some students who do not master reading in the early grades, and are socially promoted. Moreover, many teachers believe there are students who excel in reading; unfortunately, these students are not always challenged to their potential, and, hence, they lose their enthusiasm for reading. As a result, they stop reading and regress in their reading skills.

Reading is essential and crucial to a person's success in the American society. The ability to read is highly valued for social and economic success. The National Research Council is highly alarmed about the large numbers of students who are going

through the educational system, and promoted, only to graduate with limited literacy ability. The students are unable to compete in a growing and swift-moving economy. (Burns, Griffin, & Snow, 1998).

Phonemic awareness is one area in the reading acquisition process that can be used to draw conclusions on explicitly taught pre-reading effectiveness. One very important aspect of reading in the elementary reading classroom is phonemic recognition. Teachers need to be aware of activities that can explicitly be taught before reading instruction can occur. Children at risk may require more explicitly taught pre-phonemic and literary lessons (Burns, Griffin, & Snow, 1999).

In addition, explicit phonemic reading instruction is superior to instruction that does not explicitly teach the children to apply reading skills (Cunningham, 1990). While this research immediately deals with explicitly teaching phonemic sounds in the elementary classroom, the same theory can potentially hold true with teaching pre-reading lessons prior to reading a literary work in the secondary classroom.

Activating prior knowledge is important in reading. Students are always challenged to make decisions and give answers. The best decisions students and adults can make are based on past experiences. Students who can recall existing knowledge and experiences successfully assimilate new information (Tovani, 2000). Explicitly teaching pre-reading lessons sets up the student to recall similar information; in addition, they are able to make a connection. This connection allows a student to effectively acquire and retain the new information that is being transferred (Tovani, 2000).

In secondary schools, subjects are compartmentalized and departmentalized. All subjects are taught individually. Teachers are often burdened with trying to cover vast

amounts of material in a short time frame. This burden can often be lifted if teachers work together, showing students how they can use the information they already have stored. Good readers rely heavily on background knowledge to help them understand texts. Reading teachers have known, for many years, that information is best remembered when it is connected to a reader's background knowledge and prior experiences (Tovani, 2000).

Text interaction is also an important piece of the reading process. One of the best ways to aide students in interacting with the text is to show them that they have a connection with the text, in other words, they have something in common with the text (Tovani, 2000). Teaching students how to use existing background knowledge is simple. Explicit pre-reading lessons can help students make connections and draw upon prior knowledge. The complexity appears when students claim to have little or no background knowledge and refuse to make connections. In many cases, students truly have limited background knowledge on subjects because they have lost, or never acquired, a joy for reading (Tovani, 2000). Using prior knowledge in different situations shows understanding. Students who can activate prior knowledge, and transfer the prior knowledge and experiences to new material and skills, demonstrate understanding and learning (Wiggins & McTighe, 2005, p. 40). Explicitly teaching pre reading lessons can help a student develop background information before reading the text.

Another reading strategy used in the elementary classroom is small reading groups. A group of students at Michigan State University did a study to find out what middle and elementary students would do on their own when they discussed books. The data suggested that the students brought out the same points through their discussion that

teachers would have brought out. In addition, the study revealed that the students were actively engaged when they were allowed the time to interact during real-world, small group activities (Swanson, 1993). Moreover, the article suggested that there is not much research available in this same regard. Small reading groups in the classroom indicate that (a) students benefit greatly from a chance to develop group discussions and relationships surrounding text, (b) students speak for a much longer time, (c) students are able to make their own meanings, (d) students are able to enjoy others' meanings of the text, and (e) the students are able to develop and ask authentic questions and master reading tests (Swanson, 1993).

Teachers use many different strategies in teaching students how to read. Phonemic awareness and small reading groups are great strategies. Both have proven effective. While these strategies are good, they are effective because they have a pre-reading process. If explicitly taught, pre-reading lessons are effective with these strategies at the elementary school level. One can assume that, on the secondary level, explicitly taught pre-reading lessons will activate prior knowledge and help students successfully comprehend reading text; as a result, students will pass reading comprehension tests.

Data Collection and Results

Data Collection

Participants

The students involved in the study were ninth-grade students from an urban, magnet high school. Demographically, the school is 83% minority. Because the school is a magnet school, the enrollment of the school, in part, is based on a lottery system that is

organized and governed by the local school district. However, the school still has a small zone. The school zone runs about a 2-mile circumference of the school. Therefore, the academic levels of the students vary. As a matter of fact, the academic levels go from one extreme to the other. Academic ability, partly, is determined by the middle school from which the students enter. For this project, 20 students were involved in the collection of data. There were 10 girls and 10 boys. Data collection lasted for 2 consecutive weeks. This equaled 10 consecutive school days.

Methodology

The main purpose of this project was to collect measurable data about the effects of explicitly teaching pre-reading lessons to promote greater student success on reading tests. To ensure the objectivity of the project, baseline data had to be collected. A pre-test was administered to ensure that the participating students did not have any prior knowledge of the literature piece selected. The baseline data from the pre-test was compared to data collected at the end of the project. A copy of the pre-test/post-test is included in Appendix A.

The pre-test was a compilation of comprehension questions related to *Animal Farm*. The questions created were written to test the comprehension of the entire book. In addition, students were encouraged to take notes during class discussions. The students were explicitly taught lessons on allegories. Moreover, they learned fundamental aspects of the Russian Revolution. This book was chosen because it a part of the standard literary curriculum for Hamilton County high schools. Therefore, the content and subject matter is certified to be appropriate for the ninth graders involved in this project. It was imperative to not upset the regular curriculum and learning environment of the students.

Moreover, the assessments used had to resemble the assessments with which the students were familiar. Additional incentives were not necessary because an incentive program based on grades was already in place from the regular operation of the class. The pre- and post-tests were the main tools used to measure the students' reading comprehension.

Results

The results of the data collection revealed that the students who were engaged in the explicitly taught pre-reading lessons scored higher on the post-test. While the students who were engaged in the explicitly taught pre-reading lessons scored higher, many of the students who ordinarily scored poorly on reading tests scored well. The data supported the hypothesis that students who are engaged in explicitly taught, pre-reading lessons do score higher on reading tests. Figure 1 reveals the comparison of the pre- and post-test data. Again, the chart visually demonstrates the proven thesis.

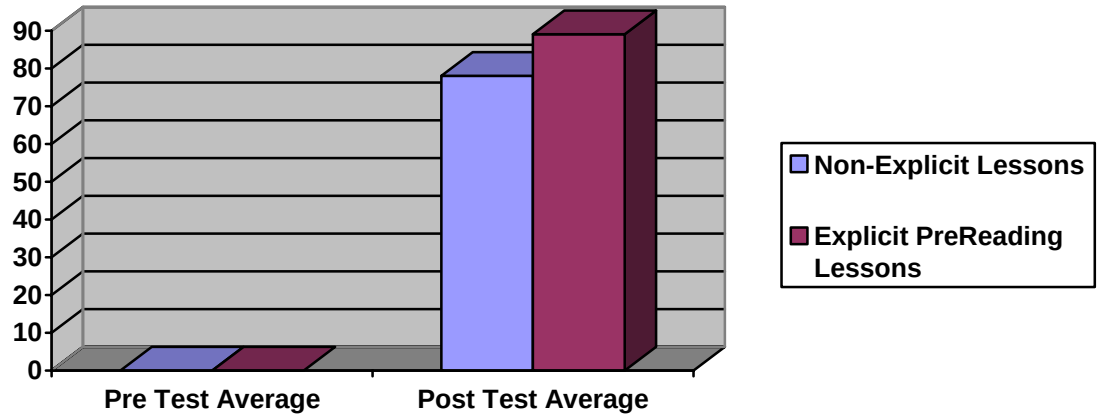

Figure 1. Pre-test and post-test data comparisons.

Moreover, Figure 1 shows an 11 point average difference in the post-test average of each group. The average of the students who were not in the pre-reading lessons was 78. The average of the students who were engaged in the explicitly-taught, pre-reading lessons was 89.

Additionally, the project revealed some other interesting results. In both groups, the girls outperformed the boys. The average of the girls and the boys in the group that did not have the explicitly taught pre-reading lessons differed by eight points. The average for the girls was 82, and the average for the boys was 74 (see Figure 2).

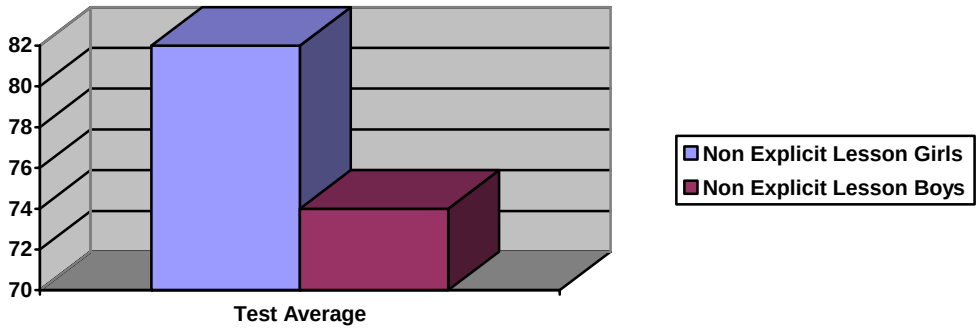

Figure 2. Girl/boy post-test average comparison.

Moreover, the group that participated in the explicitly taught pre-reading lessons showed the same trend. The girl and boy groups from the explicitly-taught lessons differed by 10 points. The average for the girls was 94, and the average for the boys was 84 (see Figure 3).

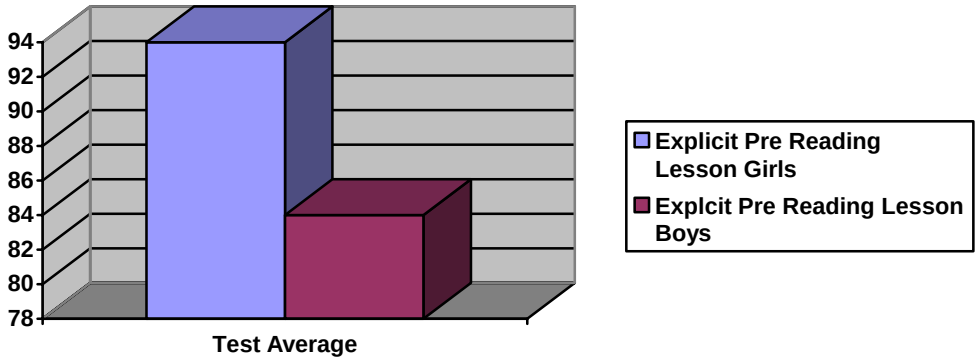

Figure 3. Girl/boy post-test average comparison.

In comparing the girl sections of the two groups, the girls who participated in the explicitly taught pre-reading lessons scored higher on the post-test by an average difference of 12 points (see Figure 4). Additionally, the boys who participated in the explicitly taught pre-reading lessons scored higher than the boys who did not by an average difference of 10 points (see Figure 5).

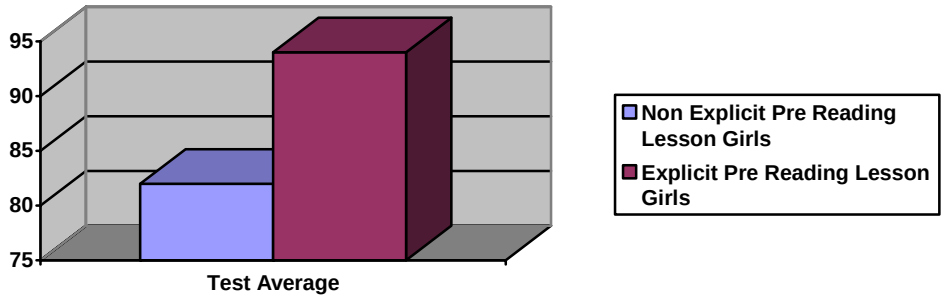

Figure 4. Girl group test average comparison.

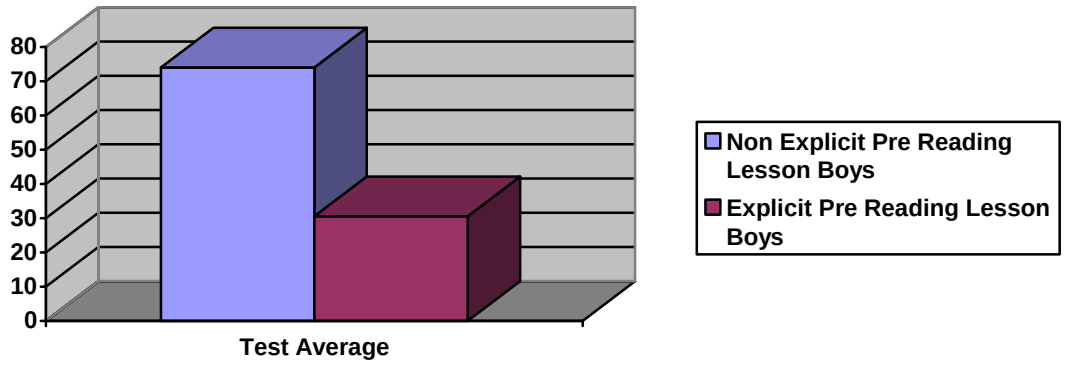

Figure 5. Boy group test average comparison.

Conclusions and Recommendations

Conclusions

Explicitly taught pre-reading lessons are encouraged, if not mandated, in teaching reading on the elementary level. Quite often, the method for teaching reading in the

secondary classroom shifts, and there is no longer a great emphasis in explicitly teaching pre-reading lessons. Pre-reading lessons allow students to activate schema and further enhance the students' ability to connect with the text. Hence, students have a greater chance of retaining information.

The data from this project strongly suggests that explicitly-taught, pre-reading lessons in the secondary classroom, much like the elementary classroom, can help students to score higher on reading comprehension tests. Moreover, the data concludes, in both groups, that the girls score higher on the post-tests. This phenomenon was unexpected; therefore, the project was not set up to measure or investigate the cause of this event. However, this is an interesting turn in the research.

It is important to note that the book choice is a required read. Hence, the students were simply motivated to do their best to maintain good grades. This project in no way measures the enjoyment level of reading for the student. This project was simply to determine the impact, if any, explicitly-taught, pre-reading lessons would have on a reading test.

Recommendations

First, a piece should be added to measure the enjoyment level of the students while reading the text. An enjoyment survey should be included in the research. This is important because the students were motivated to do well on the tests, in part, because they knew they would receive a grade. One desire of an English teacher is to have the student enjoy what he or she reads while reading.

Next, to get a more conclusive picture, the project should include more students. Additionally, the groups should be more diverse. The data only reflects the project's

impact on African American students. The demographics of the school dictated these circumstances; however, this data would potentially benefit other schools serving greater numbers of minority students.

Finally, the last recommendation would be to extend the length of the project. Many literary elements that should have been discussed with the novel were omitted for the sake of time. This project and novel unit really should be spread over a period of 4 weeks. This would prevent the students from feeling so rushed; in addition, more time would allow the instructor to incorporate more activities to promote the enjoyment of reading.

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Appendix A

Reading Test- Animal Farm Mr. Williams

1. Identify by matching

____Old Major	A. Foolish, pretty white mare; liked sugar & ribbons
____Boxer	B. Donkey; oldest animal on the farm
____Clover	C. Raven who spoke of Sugarcandy Mountain
____Benjamin	D. Huge, strong horse; not very smart, but of good character
____Mollie	E. More vivacious pig than Napoleon
____Snowball	F. He began the whole idea of the revolution.
____Squealer	G. Motherly, middle-aged mare
____Moses	H. Not much of a talker; but got getting his own way
____Napoleon	I. A brilliant talker

2. For what purpose did Major call the meeting of the animals?
a. To tell them about his vision
b. To make the animals feel guilty
c. To complain that the animals weren't working hard enough
d. B & C

3. After they vote and decide rats are comrades, Major summarizes his points for the animals to remember. What are they?
a. Whatever goes upon two legs is an enemy.
b. All the habits of Man are evil.
c. All animals are equal
d. All of the above

4. What is "Beasts of England"?
a. Jones's name for his farm animals
b. A book written by Old Major
c. The song of the revolution
d. The animals' name for Man

5. Why did the pigs get the job of teaching and organizing?
a. They were generally recognized as being the cleverest of animals.
b. No one else wanted the job.
c. They were the only animals with enough time to do it.
d. Jones appointed them.

6. What actually brought about the rebellion?
a. Jones went away, and when he got back, the animals revolted
b. The animals were hungry and broke in to get food
c. Jones sent Old Major to the butcher
d. The animals were well-rested and thought they could win

7. Which of these was not one of the Seven Commandments?

a. No animal shall wear clothes.
b. No animal shall sleep in a bed.
c. No animal shall actually kill a man.
d. All animals are equal.

8. Describe the animals' flag.
a. It was green with white skull & cross bones.
b. It was white with a red barn.
c. It was green with a white pig footprint.
d. It was green with a white hoof and horn.

9. What happened to the milk and apples?
a. The pigs were eating them.
b. The horses were eating them.
c. Farmer Jones took them.
d. No one ever knew what happened to them.

10. What was the Battle of the Cowshed?
a. Snowball made the cows join the rebellion.
b. Snowball and Napoleon fought for leadership of the animals.
c. Jones and the other farmers came with sticks and guns to retake the farm.
d. The animals fought among themselves about the windmill.

11. Describe the relationship between Napoleon and Snowball.
a. They do not agree on anything.
b. They are best friends.
c. They agree on everything.
d. They are father and son.

12. What topic divided the animals?
a. What to do with Jones's house
b. Building the windmill
c. The Battle of the Cowshed
d. Assignment of duties

13. How did Napoleon get rid of Snowball and gain full control of the animals?
a. Napoleon killed Snowball.
b. Snowball was killed at the Battle of the Cowshed.
c. Napoleon had the largest farm animals threaten Snowball.
d. Napoleon's guard dogs ran Snowball off the farm.

14. What changes did Napoleon make first?
a. He ruled that decisions would be made by the pigs in committees.
b. There would be no more debates.
c. The animals would work in shifts.
d. A & B

15. How did Squealer justify Napoleon's take-over to the others?
a. He said that Napoleon had taken on extra responsibility.
b. He said that he wouldn't want the animals to make the wrong decisions.
c. He said that Snowball was not as great as the animals had thought.
d. All of the above

16. What maxims did Boxer adopt?
a. "Napoleon is always right."
b. "I will work harder."
c. "It doesn't matter."
d. A & B

17. Why did Napoleon in fact change his mind and decide to have the animals build the windmill?
a. He decided it would be useful after all.
b. Busy animals don't have time to think and revolt.
c. He wanted to smooth over their disagreement.
d. all of the above

18. For what purpose did Napoleon begin trading?
a. The animals wanted him to do it.
b. He wanted to see what it was like.
c. He wanted to get money to buy the items the animals needed.
d. A & B

19. Why did the pigs say they had to move into the house?
a. They needed a quiet place to work.
b. They needed a clean place to work.
c. They needed access to Jones's farm records.
d. B & C

20. Who did Napoleon blame for the windmill disaster?
a. Squealer
b. Boxer
c. Snowball
d. Benjamin

21. Why did the hens have to give up their eggs?
a. There were too many chickens on the farm.
b. The eggs were attracting foxes and other animals dangerous to the farm.
c. Napoleon needed assets to sell to get money for food for the animals.
d. All of the above

22. Why did Napoleon begin executing animals?
a. He went crazy.
b. He wanted to stop any rebellion against him by keeping the animals in fear.
c. He wanted to stop the spreading of disease; the ones he executed had rabies.

d. The ones he executed were too old to be productive. They were too expensive to keep.

23. Whom did Boxer blame for the executions?
a. Snowball
b. All the farm animals
c. Napoleon
d. A & C

24. Why did the animals sing the "Beasts of England" song slowly and mournfully as they were gathered on the knoll?
a. They were singing it over the graves of their slain comrades.
b. They were wishing that Jones would come back.
c. Life on the farm was not as they had hoped it would be when the revolution began.
d. A & C

25. Why was the singing of "Beasts of England" banned?
a. The revolution was over.
b. It reminded the animals of the original ideas of the revolution.
c. Boxer didn't think it was appropriate anymore.
d. A & B

26. In what ways has Napoleon set himself apart from the other animals?
a. He had titles like Our Leader, Comrade Napoleon, etc.
b. He lived in separate quarters.
c. He had guards to protect him.
d. All of the above

27. How did Frederick cheat Napoleon?
a. Gave him grain mixed with filler
b. Gave him forged bank notes
c. Sent only half what he promised
d. Took twice as much as what he paid for

28. What moved the animals to attack Frederick and his men at the Battle of the Windmill?
a. The men blew up the animals' windmill.
b. The men took too much timber.
c. The men made fun of their animal farm.
d. The men killed Napoleon.

29. Why was Comrade Napoleon "dying"?
a. He had eaten far too much; his stomach was bursting.
b. He had had too much whiskey to drink.
c. He was wounded by Frederick.
d. He was just pretending so the animals would feel sorry for him.

30. What special treatment did pigs and piglets get?
a. They received a special education.
b. Pigs had the right-of-way.
c. Pigs could wear green ribbons on their tails on Sundays.
d. All of the above

31. What happened to Boxer?
a. Napoleon sold him to the butcher.
b. He died of old age.
c. He was sent to be treated at a hospital.
d. Napoleon personally executed him.

32. The animals on the farm worked hard. What was their consolation?
a. They were making lots of money.
b. They could take long vacations when they wanted.
c. They could also have long play periods.
d. They were working for themselves; not Man.

33. What was Clover startled to discover?
a. A pig drinking whiskey
b. A Man by the windmill
c. Snowball blowing up the windmill
d. A pig walking on its hind legs

34. What commandment took the place of the Seven Commandments?
a. "Hard work yields just rewards."
b. "Comrades are one for all and all for one."
c. "All animals are equal, but some animals are more equal than others."
d. "Do unto others as you would have them do unto you."

35. What did the other animals see when they looked into the farmhouse?
a. Men giving orders to servant pigs
b. Pigs and Men together eating animal meat
c. Men and animals together, undistinguishable one from another
d. Nothing; it was empty; the pigs had left