DOCUMENT RESUME

ABSTRACT
                A needs assessment that utilized questionnaires and an
interview showed that fifth grade students at the practicum site were not
able to use reference materials appropriately. Target groups for the
practicum were the fifth grade students and teachers. Constructivist methods
were used to increase students' knowledge of using reference materials and
their attitudes toward them, as well as to increase the teachers' knowledge
of methods available to teach these skills. The project utilized active
lessons, incorporating the use of advance organizers and visual aids. At the
beginning of the implementation, the target groups were tested to determine
their knowledge and opinions in specific areas. This process was repeated for
comparison at the end of the implementation. Student objectives were to:
increase knowledge of appropriate use of reference material by 20%; increase
use of reference materials by 30%; and demonstrate 20% more positive
attitudes toward lessons about appropriate use of reference materials and
reference materials themselves. Results indicated that the first two
objectives were met; although there was some improvement in attitude, it was
not enough to meet the third objective. Teacher objectives were to: increase
knowledge of methods available to teach students appropriate use of reference
materials by 20%; and increase students' use of reference materials by 20%.
All objectives for the teacher target group were met. (Contains 32
references.) (MES)

FOSTERING THE APPROPRIATE USE OF REFERENCE

MATERIALS IN FIFTH GRADE STUDENTS THROUGH

CONSTRUCTIVIST METHODS AND VISUAL AIDS

by

Michelle L. Smith

A Final Report submitted to the faculty of the Fischler
Center for the Advancement of Education of Nova
Southeastern University in partial fulfillment
of the requirements for the degree
of Educational Specialist

1998/August

ABSTRACT

Fostering the Appropriate Use of Reference Materials in Fifth Grade Students
Through Constructivist Methods and Visual Aids.
Smith, Michelle L. 1998. Practicum Report, Nova Southeastern University,
Fischler Center for the Advancement of Education.
Descriptors: Fifth Grade Students/Appropriate use of Reference
Materials/Reference Materials/Constructivist Methods/Visual Aids.

As documented through the use of questionnaires and an interview, fifth grade students were not able to use reference materials appropriately at the practicum site. Two target groups were focused upon in this practicum, the fifth grade students and the fifth grade teachers. This practicum used constructivist methods to increase the students' knowledge in the area of using reference materials and their attitudes towards them, as well as increasing the teachers' knowledge of methods available to teach these skills. The project utilized active lessons, incorporating the use of advance organizers and visual aids. At the beginning of the implementation period the target groups were tested to determine their knowledge and opinions in specific areas. This process was repeated for comparison at the end of the implementation phase to identify changes.

The objectives for the students were that they would increase their knowledge of the appropriate use of reference materials by 20%; increase their use of reference materials by 30%; and demonstrate 20% more positive attitudes towards lessons centered around the appropriate use of reference materials and reference materials themselves. When the students knowledge in the area of using reference materials appropriately was tested, the following results were found. Fifty-eight of the 167 students in the target group met the objective, eighty-six showed improvement but not enough to meet the objective or scored the same and twenty-three showed a decline in scores. When focusing on the students using reference materials, there was a 44% increase. This showed that this objective was met. Students showed an 18% increase in their positive attitudes about reference materials and lessons centered around them. Although there was some improvement, this was not enough to meet the 20% increase that was specified for this objective.

The objectives for the teacher target group were that their knowledge of methods available to teach their students the appropriate use of reference materials would increase by 20%; and they would indicate an increase of 20% in their students' use of reference materials. All objectives for the teacher target group were met. Appendixes include specific scores for members of the target group.

ii

Authorship Statement

I hereby testify that this paper and the work it reports are entirely my own. When it has been necessary to draw from the work of others, published or unpublished, I have acknowledged such work in accordance with accepted scholarly and editorial practice. I give this testimony freely, out of respect for the scholarship of others in the field and in the hope that my own work, presented here, will earn similar respect.

_____
student's signature

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iii

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PROJECT VERIFICATION FORM

Dear Mentor:

Practicum students in Nova Southeastern University's GTEP programs for master's and educational specialist degrees are asked to provide verification that the project activities reported in this document took place as described. On this sheet please write a brief overview attesting to your knowledge of the project activity reported in the accompanying document. Note that you are not asked to evaluate or make judgements about the quality of the project on this page.

Practicum title *Fostering the Appropriate use of Reference Material by 5th Grade Students through Constructivist methods and visual arts*

Student's name *Michelle Smith*   Completion date *March 31, 1998*

Project site *Pembroke Lakes Elementary*

Mentor's name *Joseph M. Schapiro*   *[signature]*
                       print   signature

Mentor's position at the site *Principal*   Phone # *437-1940*

Comment on impact of the project (handwritten):

Students from seven Grade 5 classes participated. They acquired knowledge on reference skills that will benefit them on future research projects.

iv

TABLE OF CONTENTS

CHAPTER I

Purpose

Background

The community is a residential and industrial one, located in the southern region of the state. The population of the community is approximately 104,000. This number changes regularly, due to the fact that there is construction taking place in the community which increases the number of occupants on a daily basis.

The individuals that reside in this community are predominantly families with school aged children. The community dwellings are both owner-occupied and rental units. The majority of these dwellings are owner-occupied.

The school was opened in 1975 as an all portable facility. The permanent facility was completed and occupied in 1977. New construction and renovations were completed in 1994 which added new pupil services offices, a larger media center, a new art room, a science laboratory, two computer labs, and six kindergarten classrooms. The school currently consists of a permanent building housing 35 regular classrooms and 10 portable classrooms.

The faculty at the practicum site consists of 45 certified teachers. These teachers hold degrees ranging from Bachelor of Science to Doctorate of Education. These individuals work towards the goal of meeting the individual needs of students and aiding them in reaching their highest potential.

8

The administration at this school consists of a principal and an assistant principal. They work together to uphold the goal of the school which is to establish a learning environment where individual needs are met through high expectations that challenge individual students to meet their potential. The administrators have an open door policy that entertains suggestions that will benefit the students.

Most of the students come from lower middle class families where both parents work. Most of them are within walking distance of the school. Two county busses serve the school. There are 8 day care busses that transport students. The school population is 1,011 students. The ethnic background of these students include 68% White, 21% Hispanic, 7% Black, 2% Asian, 1% Indian and 1% Multi-ethnic.

The school offers a variety of programs to meet the individuals needs of their students. These programs include Exceptional Student Education (ESE), Alternative Education, Mainstream Academic Support, Guidance Services and English Speakers of Other Languages (ESOL). The school library media program offers several reading incentive programs for students. These include Reading Across Broward, Sunshine State, Young Readers Award, Book It, Accelerated Reader and BJ's Book Bonanza.

The writer holds a Bachelor of Science degree in Elementary Education, a Master of Science degree in Reading and is currently completing an Educational Specialist degree in Educational Media. The writer holds certification as an Elementary Education teacher with the state. The writer has been employed by the

school board for seven years as a teacher. The last assigned role was at the practicum site as a fifth grade Alternative Education teacher. Sabbatical leave was granted to the writer to complete certification as a media specialist. Due to this, the writer is not assigned to a school for the 1997-1998 school year but will be assigned as a media specialist during the 1998-1999 school year. During the 1997-1998 school year, the writer holds the status of a volunteer in the school library media center at the practicum site since the beginning of the school year.

The writer is related to the problem as a media specialist would be but with a volunteer status. The writer has been given to opportunity to work with students and interact with teachers on the level of a media specialist. This problem was highlighted while working with both groups.

The writer has been given leverage to work with the faculty and students at the practicum site as a media specialist would. This individual has been given control over the problem to work with the students and teachers in improving it. Attention will be paid to collaborating with the mentor (the principal) and the media specialist at the practicum site before during and after the implementation phase.

Problem Statement

As recommended by The Florida Department of Education (1984) through *INFORMATION SKILLS FOR FLORIDA SCHOOLS K-12*, at the fifth grade level, students should be able to use reference materials such as an almanac, atlas,

dictionary, and encyclopedia accurately to retrieve specific information. This guideline is also upheld at the county level in the their handbook when focusing on teaching reference skills. The ability to use these formats for information retrieval will aid students in finding, using and applying information which will prepare them to function successfully within the school program. If the appropriate use of reference materials is mastered at the elementary level students will also have knowledge in the use of some of the basic tools needed to become life-long learners.

In order to determine the problem most in need of addressing within the media center at the practicum site, the writer focused on three sets of individuals. These individuals included the media specialist, the faculty, and the students. Based on the following findings, the conclusion was drawn that the problem of fifth grade students not being able to use specific reference materials accurately was in critical need of addressing.

The first measure taken in carrying out a needs assessment was an interview (Appendix A: 63) conducted with the media specialist. In this interview the use of reference materials was cited as being an area in which students are in need of improving. This area is most critical for the fifth grade students at the practicum site due to the fact that they are expected to be able to use these materials appropriately in the fifth grade and upon starting their middle school careers. The majority of these students rely upon assistance from the media staff to retrieve

information that they should be able to access easily at their level.

The second measure taken during the needs assessment was to distribute a questionnaire (Appendix B: 65) to the teachers. In this questionnaire, 83% of the teachers indicated that their students are in need of improving in the area of using reference materials. The strongest agreement among grade levels came from the fifth grade teachers as 100% of them felt that this was true. It was reported that these students often attempt to retrieve information from one reference source that would be best retrieved from another. Inaccurate information or information that is not specific enough is often retrieved.

Due to the aforementioned findings, a third measure was considered necessary as a part of the needs assessment; this required the distribution of a questionnaire (Appendix C: 67) to the fifth grade students at the practicum site. Approximately 70% of these students indicated that they do not know how to use specific reference materials. It was also indicated that 65% of the students who filled out the questionnaire felt that they were not good at using reference materials.

At this time, when the appropriate use of reference materials is being taught at the practicum site, the drill and practice method is used. The media specialist teaches these skills within the media center. The fifth grade teachers also teach these skills independently within the classroom using the same method and worksheets for practicing the skill.

In solving the problem of fifth grade students being unable to use reference materials accurately, two target groups will be focused upon. The first target group will be seven classes of fifth grade students. The second target group will be the seven fifth grade teachers who instruct these students.

The first group that will be targeted for this practicum are the fifth grade students. The fifth grade level for the 1997-1998 school year consists of seven classes containing 205 students. The average class contains 29 students. Their average age is 11-years-old. There are six regular fifth grade classes and one Dropout Prevention class. As indicated through reading placement, approximately 70% of these students read at their grade level, 10% read above their grade level, and 20% range at reading one to two grade levels below their grade level. Approximately 30% of these fifth grade students receive Exceptional Student Educational services. These services meet the needs of fifth graders who have learning disabilities, emotional handicaps, speech impediments and those who are gifted. Approximately 8% of the fifth grade students receive English Speakers of Other Languages (ESOL) services.

The second group that will be targeted for this practicum are the seven fifth grade teachers. These individuals hold degrees ranging from Bachelor of Science to Doctorate of Education. They all hold certification to teach first through sixth grade students in the state. They involve themselves in district and college offered classes on a regular basis in order to improve their instructional skills.

Despite the fact that reference skills are introduced at the primary level in the elementary school, fifth grade students still are unable to use these items accurately. There are three probable causes for this deficiency. The first is that the fifth grade level consists of students at a variety of levels, interests and areas of need. This grade level has students ranging from a status of gifted to students who are categorized as having learning disabilities and needs derived from an ESOL status. This range in levels, interests and areas of need may be a problem if they are not considered during the planning and instruction of lessons dealing with the appropriate use of reference materials.

The second and third probable causes are ones that were cited by the students themselves in the answers they gave on the aforementioned questionnaire. Some students indicated that they don't enjoy learning about reference materials because it is "boring". Others indicated that they don't enjoy these lessons because they "don't have to know it, the librarian will help them". Attitudes such as these may be the reasons why students "tune out" lessons designed to teach them about the appropriate use of reference materials. The majority of fifth graders also stated that they do not use the reference materials at school. If they are not practicing to use these tools, they will not learn to use them appropriately.

If this problem is not addressed now when these students are fifth graders, the effects will be detrimental in three main areas of these students' lives. First, these fifth grade students will embark upon a career as middle school students

unprepared to retrieve information accurately as they will be expected to do. Second, they will become high school students who are not equipped to do the research necessary to complete assignments that require the use of reference materials. Third, they will become college students dependent on the reference librarian to solve their information retrieval problems. To say the least, the effects of this problem lead to other problems that will be faced as these students become more advanced in their academic careers.

As stated earlier, it is expected at the state and county level that by the fifth grade year, students will know how to accurately retrieve information using reference materials. Although no specific percent is provided by the state, one can assume that at least 50% of the students must achieve this goal. The student questionnaire completed by the student target group showed that 70% of these students are unable to use reference materials appropriately.

The appropriate use of these materials is also expected at this level in order for students to complete assignments in other content areas. Through statistics documented from the questionnaires discussed earlier, this is a problem for the fifth grade students at the practicum site. They are unable to use these materials appropriately at their level.

The American Library Association and The Association for Educational Communications and Technology (1988) in their guidelines for school library media programs called *Information Power*, gives a part of the responsibility for

teaching library skills to the media specialist. This project is directly connected to the writer's major of Educational Media. As a media specialist the writer will be expected to teach, reinforce and aid in the acquisition of these skills. The classroom teacher is also partially responsible for teaching these skills; however, the media specialist is confronted with the students' inability to use reference materials on a daily basis as they visit the media center.

Objectives

The proposed objectives for the student target group were:

Objective One

Within a designated period of 12 weeks, the targeted fifth grade students will increase their knowledge of the appropriate use of reference materials by at least 20% as shown by a student pretest/posttest (Appendix D: 69).

Objective Two

Over a period of 12 weeks, the number of students using reference materials within the library media center at the practicum site will increase by at least 30% as measured by a use of references pretest/posttest and a portfolio checklist (Appendixes E: 73, F: 75).

Objective Three

During a 12 week period, the targeted fifth grade students will demonstrate 20% more positive attitudes towards lessons centered around the appropriate use of reference materials and reference materials themselves as shown by positive

responses on a use of references pretest/posttest (Appendix E: 73).

The proposed objectives for the teacher target group were:

Objective One

Over a period of 12 weeks, the targeted fifth grade teachers will increase their knowledge of methods available to teach their students the appropriate use of reference materials by at least 20% as measured by a teacher pretest/posttest (Appendix G: 77).

Objective Two

During a 12 week period, the targeted fifth grade teachers will indicate an increase of at least 20% in their students' use of reference materials as shown by a fifth grade teacher pre and post questionnaire and a pre and post essay scoring sheet (Appendix H: 79, I: 81).

CHAPTER II

Research and Planned Solution Strategy

In an exploration of the beliefs and effectiveness of a constructivism environment, Barron (1996) discussed information literacy and transferrable library skills as the result of individual, active learning and curriculum-integrated library instruction. The article explored the need for information specialists (librarians) to work with content specialists (teachers) in information literacy and the integration of the library media program into the curriculum. The author's theory was grounded in the belief that the individual must be active in his or her learning, active from the standpoint of bringing meaning to situations instead of being told the meaning. It was suggested that learners be allowed to search out data, analyze it, compare it to what they already know, and develop their own conclusion. The findings were that library skills were transferrable and meaningful to students when taught as a part of a class or unit within the curriculum.

Tastad and Collins (1997) examined the constructivist philosophy as a means of teaching the information skills process and the writing process. The authors of the article stated that the bridge between these two can be gapped due to the fact that the act of constructing ideas is an information-seeking process. A longitudinal study conducted in a junior high school from 1990 to 1993 indicated that they were successful in teaching the information skills process through the library media

12

program. It was believed that the success of the study was due to the presence of other process programs such as one focusing on writing. This approach allowed the students to examine their own ideas, interact with others, think critically and pause for reflection.

Tastad and Collins (1997) continued by describing a similar project which was modeled after the one previously mentioned where a writing center was developed as a means of integrating the curriculum. This project extended to include elementary and high school students along with the middle school students. The elementary school teachers who utilized the program got successful results because they believed in the constructivist philosophy. This project was not successful with the middle school students because their teachers viewed the writing center as being a place to use for purposes other than the one intended.

The findings of the research of Tastad and Collins (1997) were that for the idea of information skills and the writing process to be taught in conjunction, the constructivism philosophy had to be embraced. This philosophy not only has to be embraced by the teacher and the librarian, but by the administrators as well. If utilized appropriately the research carried out by this project supports data that the information-seeking process and the writing process complement one another and can be infused as the web that integrates the entire curriculum within a school setting.

Dame (1995) explored ways in which library skills and content could be taught

to linguistically diverse students. Specific attention was paid to the importance of advance organizers and visual resources such as concept maps, picture files and books without words to teach library skills to students with limited English proficiency. It was also suggested that teachers pay attention to the fact that research clearly emphasizes that for learning to occur, new information has to be integrated with the learners prior knowledge. The teacher would need to provide opportunities for the ESOL student to call on their prior knowledge so that a move may be made from memorizing information to meaningful learning. This would begin the process of students connecting learning events rather than remembering bits and pieces of information.

Dame (1995) continued by discussing the language experience approach where visuals were used to aid students in forming their own conclusions and making inferences. The central concept of this approach was to make learning meaningful by using the students' vocabulary and background experiences to create text. Studies have shown that approaches discussed in this article prove effective in constructing meaning for the ESOL student.

A look was taken at different learning styles for school library media specialists as Barron (1997) explored its implications. Focus was placed on the different learning styles of students and the very positive implications they may have for media specialists and their programs. The author took a detailed look at the differences in people and specific learning style inventories. Information was also

given on where one may go on the Web to find information in this area. It was suggested that the learning styles of students be given a great deal of attention so that our working and learning environment may be improved.

In an effort to determine whether new models and technology are making a difference in school library reference services, Truett (1994) highlighted data from a survey. The survey was mailed to over 200 school libraries throughout the state of North Carolina. Elementary, middle and high schools were targeted. The questions focused on the most popularly used reference materials and opinions on these.

The findings of the survey conducted by Truett (1994) were that electronic reference sources were considered a necessity in library media centers. The emergence of such technology affects both what and how the librarians teach their research and information skills. Over three-fourths of the librarians surveyed reported positive changes in students and at least one positive change in their teaching of reference skills and the research process in their library.

Truett (1994) continued by discussing the fact that positive change in students should be the major rationale for introducing any new technology into the school media center. The conclusion was drawn that new technologies are successful teaching tools. The same can be said for the positive change documented by librarians. These types of changes were viewed as a positive move in bringing teaching into line with the information age of electronic databases and resources.

Stripling (1996) took a look at quality in school library programs and their focus on learning. The fact was highlighted that the quality of school library media programs was linked to the quality of education offered in the school. Additional attention was paid to the fact that in an effort to produce school-reform and enhance the quality of education, schools have evolved to a focus on learning. Due to this fact school library media programs have changed their focus from collections, to programs, to instruction and then to learning.

Stripling (1996) went on to suggest that learning within the library media center should be constructed by the learner and facilitated by the media specialist. The school library media specialist was viewed as having the role of creating a learner centered environment. It was stated that collaboration between the school library media specialist and the classroom teacher is fundamental to good school libraries. Suggestions were made based on the constructivist learning environment where the learner has the primary responsibility for determining the direction and scope of the learning.

In an explanation of a program designed to service the reference needs of children, Overmyer (1995) highlighted an advanced reference system for children. Through this system, reference questions may be referred to a regional center using fax, phone and system delivery. This reference center is based in California and has fourteen reference centers servicing libraries and their patrons from libraries throughout the state. The system offers equal access to information for all

those patrons whose questions cannot be immediately answered in their local library. Also included was information on sharing resources, online searching, telephone inquiries, using adult references, the use of specialized collections and using the Internet.

Sartin (1992) a librarian at a boarding school in Arizona, conducted a lesson using reference materials within the library media center as a cooperative effort with the classroom teacher. Students were first separated into groups. Reference materials such an atlas, almanac and encyclopedia were used to aid students at the fourth to sixth grade level in discovering information about Christopher Columbus. The library media specialist and the teacher worked together to give students a short orientation on certain types of reference materials within the media center, locating the materials and discussing sources. A worksheet was included that guided students in finding information using specific reference materials and led them to choosing specific information from each source.

Helmich (1993) provided an analysis of selected research articles that addressed issues affecting school library media centers. The research was conducted primarily within the elementary school setting. Some of the topics highlighted were instruction, information literacy skills, CD-ROM reference sources, use of the Internet and accountability. Specific attention was paid to the frequency with which teachers chose the library media specialist to work with them on instructional problems and other teacher related factors.

Major findings of the research done by Helmich (1993) concluded that teachers in academically successful schools tended to choose the library media specialist more frequently than teachers in academically unsuccessful schools. Inservice for the faculty was also found to increase the use of CD-ROM resources for reference in specific subject areas, increased classroom instruction by teachers, and motivated teachers to update the curriculum. The inservice sessions provided an environment where media specialists became more involved in curriculum planning and teachers better understood the need for students to develop information literacy skills.

Schuster (1996) discussed the advantages of using multimedia materials as reference tools. The point was made that hearing authentic sounds and seeing live action videos engaged students' auditory and visual senses leading to a deeper understanding of various subjects and addressing different learning styles. The major finding was that multimedia CD-ROMs increased the motivation of students.

In an effort to aid students in answering the question "What Can I Use for this Project?", Jansen (1996) focused on ideas and strategies to assist young students in identifying appropriate resources for specific research tasks. The ideas for the project came about as the author worked with students to find information and realized that they had no idea which reference materials were necessary to retrieve their information. The author placed the responsibility of introducing specific resources for each assignment that the students could use, but may not be able to

identify independently on the media specialist and teacher. Specific processes for working through assignments where information has to be retrieved were highlighted. These processes included brainstorming and narrowing the list of sources, using a checklist of primary sources and making other considerations. The author suggested that if these processes were used accurately, students would be trained to make the best possible selection from resources available in obtaining information for specific tasks.

McGuire (1994) detailed the steps involved in a pre-research activity designed for fourth grade students as they prepared to study Japan. The author believes that it is important to consider the interest and levels of the students when preparing activities within the library media center in order to meet their needs and stimulate them. In these pre-research activities, emphasis was placed on the use of the materials in the reference section. Groups were set up and the activities were centered around teams getting points for correctly answered questions and moving to higher levels. After answering questions at the first level, students got information on a computer screen indicating whether their answers were right or wrong. If correct, students received an incentive and went to their teacher who was on hand to give assistance with the questions needed to advance to the next level. This activity proved effective in motivating the students and making them excited about the upcoming research they had to do dealing with Japan. It also gave students a chance through answering the questions to touch and use the tools

necessary to be successful fact finders.

McGuire (1994) continued by expressing the belief that beginning library media center users need to touch many kinds of reference books, open them, and explore them, in an effort to make these resources their own. This leads to knowledge of a variety of reference sources which will give them a head start on success. Additionally, information expressed in the article led to the understanding that after using information-gathering skills in several concrete projects, students will be able to generalize the process and apply it to other areas of learning. Examples of multiple choice pre-research questions and suggestions for adapting them for higher and lower levels were included.

In an attempt to address the problem of students in upper elementary grades not possessing adequate enough reference skills to handle advanced academic tasks such as content reading and report writing, Gautheir (1990) developed a four-step strategy. Reference materials such as the dictionary, encyclopedia, thesaurus, atlas, almanac and card catalog were focused upon. First, the reference source should be introduced. Second, the use of the reference source should be demonstrated using direct teaching. Third, questions should be matched to sources. Fourth, the reference sources should be used in assignments. The aforementioned steps were found to be effective in better preparing students for the content-oriented curriculum which is characteristic of the middle school.

Pobanz (1991) advocated close contact with students and staff in order to best

meet the needs of users in the library media center. This close contact proved helpful to the author in the selection of curriculum-based reference tools, as well as other reference material geared toward students' interests. Additionally, the author believes that informal teaching of library skills to individual students is ongoing, but most media specialists are required to also teach these skills to whole classes. Though some commercially prepared materials to teach necessary library skill may be good, the author felt that they never had enough materials to teach all the students in need of instruction or materials suggested were not available. As a result of this, the author advocated teacher-created skills lessons and units in order to meet the individual needs of students with materials on hand. These lessons and or units may be easily updated to include new reference materials as they are added to the collection.

Martin (1995) detailed ideas leading to ways in which a media specialist may enhance atlas skills. Two specific atlases were reviewed then the author suggested that a contest be sponsored to give students the opportunity to demonstrate the correct use of an atlas to verify locations throughout the world. One idea suggested was to introduce students to fictional characters as was done with "Where is Waldo" and "Where in the World is Carmen San Diego", then give students clues to aid them in finding the location of the individual. It was also suggested that media specialists enhance atlas skills by using a passport with activities included which may be turned in. The major finding was that the use of

the contest to stimulate students to use the atlas was effective.

Martin (1995) reviewed the World Almanac on CD-ROM then gave ideas for students' active involvement in the use of this item. It was suggested that this be accomplished by utilizing a scavenger hunt in which students use both print and nonprint versions of this reference tool. Students would obtain answers to the items on the scavenger hunt while working towards a specified reward. Specific directions and a sample worksheet were included.

Clyde (1996) highlighted findings from research done to determine the CD-ROMs that were being used most by schools. Information was gathered through responses to questionnaires distributed through CMC News ("Computers and the Media Center") which is a publication containing editorials, news, software and CD-ROM reviews and product announcements. Findings from the 252 responses to the questionnaires indicated that among the most used in media centers were Grolier's Electronic Encyclopedia, then SIRS (Social Issues Resources Series), and then Newsbank. Other findings of the research were that the use of CD-ROMs in media centers was increasing as a means of reference and current information access.

Findings of Byerly and Brodie (1997) indicated that library media specialists have discovered that many reference questions can be answered by searching the Web. Problems that may arise when searching the Web for information include the temporary nature of many Web sites and the fact that it seems somewhat

impossible to be aware of all the potentially useful sites. The authors suggest that

although library media specialists have always relied on print reference collections

to answer many of the questions they receive from children and adults, there are

now many well-established electronic reference collections available if one will

utilize the Web. Web sites were highlighted that represent the best of the general

reference collections as well as sites that provide links to other sites.

Bucher (1995) discussed the benefits of using multimedia presentation software

for elementary and secondary students, teachers, and librarians. It was suggested

that this strategy be used by librarians to produce library orientation reference

guides, and skills instruction programs that students and teachers can use at any

time. The use of multimedia software was advocated due to the fact that it would

enable students to combine traditional library/information skills with higher level

thinking skills when actively engaged in producing their own presentations. The

use of this strategy proved beneficial when librarians in Virginia used it with

students in an English class as they studied American Poets using HyperCard.

Specific directions were given for guiding students through the use of multimedia

software and the presentation of projects.

For the purpose of getting students to use reference books, Clark (1995) used a

Where is Waldo Library Search. In this activity, students use reference materials to

find answers to a travel game based on a "Where's Waldo" format. Students were

required to read clues on a daily basis, decide what information they needed to

look up, and what reference materials they should use. Prizes were given to students who used reference materials accurately to retrieve information leading to a solution. Clues for a worldwide version and a U.S. version of this activity were included in the article. The use of this strategy proved beneficial in getting the elementary students in the author's media center to use the reference center that they were reported as usually trying to avoid.

In an effort to make students aware of the various reference works available, Scott (1997) suggested the creation of a reference toolbox. This strategy was created due to the fact that reference works that were obvious to the author weren't as obvious in the minds of the third grade students. The toolbox was used to introduce dictionaries, atlases, encyclopedias, and thesauri to these students. Students used a piece of construction paper to create the reference toolbox. As reference materials were taught and mastered, students added them to their toolbox. The students were led to the understanding that references are tools that need to be used by a student skilled in their use, for a specific purpose.

In this article, Kriesberg (1995) highlighted the top ten ways that library media specialists can get their students to explore the library media center. These were based on the belief that the more students explore the media center the more they will be comfortable using it. These top ten ways range from having students find as many sources of information possible on a single topic to simply giving them the time to explore. Attention was paid to the idea that we cannot teach students

everything; however, we can teach them how to find answers for themselves.

In an effort to simplify the information maze, "Lousy Reference" (1997) explored finding the right reference sources in order to meet a specific need. Specific attention was paid to modeling reference behavior so that students not only get the right source, but know how to think about their questions or information problems. It was suggested that when information found is being evaluated, it is important that we focus on the need to understand purpose or the need for information, accuracy and authority.

The contents of an encyclopedia set titled "The Middle Ages: Family Life" (1996) were explored as life in this era was highlighted. A sample lesson which included library media skills objectives, curriculum objective levels, resources, instructional roles, activities, evaluation and procedures was included. Attention was paid to the library media specialist supporting research activities introduced by the teacher in the classroom. A cooperative effort between the media specialist and the classroom teacher was suggested as being important to the students understanding information on specific topics.

Covington (1992) used the strategy of utilizing a reference trivia game to get fourth grade students to identify, examine and use various reference sources. In this model, trivia questions were created that were appropriate to references selected and could reinforce the classroom curriculum. The media specialist and classroom teacher were available to assist students with the location of references,

use of references and station-to-station rotation. Suggestions were given for setting up stations, carrying out the strategy, and adapting it to different grade levels.

Thompson (1992) in an effort to teach a room full of restless fifth graders reference skills, created puzzles that were described as being fun to solve and were fun to create. Students were given questions with clues as to which reference materials would include the answers. After answer spaces were filled in, letters could be tranferred to a corresponding diagram which revealed a quote.

Paterson (1992) created a strategy for reviewing textbook definitions, kinds of reference sources, specific ready titles, and particular databases while instructing a class on Information Services in Syracuse. The reference strategy was based on the games Jeopardy and Wheel of Fortune. The basic format of these games were followed. This approach proved to be an exciting way of reviewing the intended information. Students in the college level class planned to use this approach to teach elementary through high school students in school library media centers.

Roberts and Findley (1992) used the format of the game $100,000 Pyramid to get students to locate information in encylopedias, almanacs, and handbooks. Questions that students researched were used in the game. The students were divided into groups and given questions. The initial game was over when the first group finished answering the questions.

In an effort to provide an intersting means of evaluating information skills,

"Information for a Buck: An End-of-Year Information Skills Evaluation" (1994) highlighted a strategy using "INFO BUCKS" . To use this strategy the media specialist would type up bucks and give them to participating teachers. Students may go to these individuals to get question cards. Answers to the questions may be retrieved using reference sources. When the correct answer is obtained along with the source title and page number, the student may return to the staff member to give the answer and earn a buck. Students who earn the most bucks from the largest number of staff members may be given special recognition.

Chase (1994) supported the idea of showing high school students how useful reference materials can be in their everyday lives. Questions were formulated based on information one may want to retrive in everyday life. Students were requested to report orally on their questions and where they found the answers. This was done in an effort to give every student the opportunity to hear about several reference materials without the assignment becoming burdensome. Questions may be created based on books available in the media center and the reference books may be listed to guide students.

Planned Solution Strategies

The methodology of four of the individuals whose work was reviewed was utilized in this practicum. First the metodology of Barron (1996) was chosen. This led to the creation of a constructivist environment for the students. Information literacy was integrated into the curriculum as the classroom teacher and the media

specialist worked cooperatively. Using the methodology of Barron (1996), active

learning was advocated. Instead of just being told a group of facts, the individuals

in the target groups were given the leverage to become active fact finders. This

allowed the learners to analyze data and develop their own conclusions.

Second, the methodology of Tastad and Collins (1997) was chosen. The

constructivist philosophy was incorporated as information skills and writing were

bridged. The writer created a model designed after the one that was effective in the

junior high school described in the work of Tastad and Collins (1997) but at an

elementary level. As recommended by Tastad and Collins (1997) information

seeking skills were fused with writing skills in an effort to integrate the curriculum.

Measures were taken to identify whether or not the teachers and administrators

believed in the constructivist philosophy since research shows that it is through this

belief that this model would work.

Third, the methodology of Dame (1995) was chosen. This will led to the

inclusion of different learning styles and levels as advance organizers and visual

aids were utilized. Using the ideas expressed by Dame (1995) advance organizers

were used and students' prior knowledge was called upon during lessons. This

methodology was used to meet the needs of the student target group in a variety of

areas.

Fourth, the methodology of Stripling (1996) was chosen. This led to the

creation of a constructivist environment where the learner was the main focus

during lessons. Based on the methodology of Stripling (1996) the constructivist philosophy was utilized by allowing students to decide the direction and scope of their learning. Lessons were planned and centered around the learner.

The methodology of the four individuals detailed previously were chosen and considered appropriate by the writer due to an effort to meet the individuals needs of the target groups. There were two target groups to be considered in this practicum, the students and the teachers. The ideas expressed in the work of the authors chosen were parallel to the needs of these two target groups.

The fact that the constructivist philosophy was highlighted in three of the four articles selected, led to the ideas in them being utilized. This type of environment was viewed by the writer as being best in meeting the needs of both target groups. This made them the center of instruction as they determined the direction and scope of their learning and it fostered interest in the information obtained. The fact that these methods also lent themselves to collaboration between the media specialist and the classroom teachers while the classroom curriculum was integrated into lessons taught in the media center made the aforementioned methods appropriate for this project.

There were several learning styles and levels to be considered in this practicum. The use of advance organizers and visual aids highlighted in the work of one of the authors chosen serviced and addressed the variety of styles and levels. This led to an environment where all individuals were included in the lessons.

CHAPTER III

Method

There were several tasks that the writer accomplished prior to implementation.

Teacher made tests were formulated for both the student and teacher target

groups. Practice sheets were formulated for the student target group. Lessons and

activities were fine tuned based on the appropriate use of reference materials such

as the almanac, atlas, dictionary, encylcopedia (print and nonprint), and thesaurus.

Advance organizers and visual aids were created by the writer to enhance

instruction. Collaboration with the mentor (the principal) and the media specialist

at the practicum site was continuous. The establishment of cooperative groups was

also done.

The student target group was responsible for accomplishing three main

activities during the implementation phase of the practicum. The first was to utilize

specific reference materials accurately based on the guidance of the writer and their

classroom teacher. The second was to work cooperatively and actively in groups.

The third was to create an essay on a state of their choice using information

obtained from reference materials. This correlated with the fifth grade students'

study of the United States and its regions in social studies.

The teacher target group was responsible for completing four main activities

during the implementation phase of the practicum. First, the identification of the

30

specific reference needs of their students was done. Second, the utilization of methods obtained as a result of the two in-service sessions they were required to attend for teaching the appropriate use of reference materials to the student target group was carried through. Third, collaboration with the writer during classroom visits and otherwise whenever necessary on matters concerning the project was done. The assignment of two essays to the student target group as well as the grading of these items was done by the teacher target group.

There were two groups of participants included in this project. The first was the set directly involved in the acquisition of the practicum, these were the writer, the fifth grade students, and the fifth grade teachers. The second were the set of individuals indirectly involved in the acquisition of the practicum, these were the media specialist and the principal who also served as a mentor for the writer.

The following general materials were used to assess, guide, and monitor the teacher and student target groups. These materials included folders used as portfolios for each cooperative group, writing utensils, advance organizers, visual aids, evaluation tools, and reference materials such as an almanac, atlas, dictionary, encyclopedia (print and nonprint) and thesaurus. Computers and an overhead projector were aids in utilizing the items listed earlier. These items are detailed specifically along with the activity they were used with, in the twelve week schedule that follows.

Twelve Week Schedule

Student Target Group

<u>Week One</u>

Activity 1: The writer introduced the student target group to the project by

conducting a Booktalk.

Purpose: To stimulate students in the area of using reference materials

appropriately to retrieve information.

Materials: Notes highlighting the project, notes for presenting the reference books

during the booktalk and the reference books that were focused upon

(*The World Book Encyclopedia, The World Book Atlas, The World*

Almanac and Roget's Thesaurus). A concept map was used as a

means of guiding students through the discussion of the project. On

this concept map, ways of using each of the aforementioned reference

tools were grouped as a means of giving the students a visual picture

of the ideas that were discussed by the writer pertaining to the

project.

Evaluation: Feedback from students during the discussion of the project and their

interaction with the writer during the Booktalk was used as means

of evaluation.

Activity 2: The students completed two teacher made pretests.

Purpose: To determine their specific knowledge in the area of using reference

materials as well as their use of and attitudes towards these items. Some

of the results of this activity were used in the formulation of cooperative

groups based on the students' scores. Students who received higher

scores were placed in cooperative groups with students who received

lower scores to provide some balance in the ability levels of the

individual groups.

Materials: Two teacher made pretests and pencils.

Evaluation: A score of 70% and above was considered as being acceptable.

Any score below 70% was considered unacceptable and the student

was considered as being in need of improvement. One-on-one attention

was given to these students in order to aid them in improving.

Week Two

Activity: Students completed a cooperative group activity (Appendix J: 83)

under the direction and guidance of the writer.

Purpose: To familiarize the students with the individuals they worked with in

in their cooperative groups. This activity served the purpose of

guiding the students in the selection of a state which they focused on

in their essay.

Materials: The cooperative group activity sheet and writing utensils.

Evaluation: The writer collected and reviewed the portfolios for specified content

based on the week's activity.

Week Three

Activities: After instruction and modeling by the writer in the appropriate use of

an encyclopedia (print and nonprint), students pointed out the

volume which should be used to retrieve specified information using

a set of encyclopedias and practiced using the encyclopedia while

completing a practice sheet (Appendix K: 85).

Purpose: To guide students in the appropriate use of an encyclopedia as well

as giving them the opportunity to practice using this skill.

Materials: A visual aid in the form of an organized set of encyclopedias, The

World Book Encyclopedia on CD-ROM and the print version of *The*

World Book Encyclopedia.

Evaluation: A practice sheet was used to evaluate the students' understanding

of the skill. A score of 70% or above was considered acceptable.

Teacher observation as the students used the visual aid in the form of

an organized set of encyclopedias was also carried out. Students who

received an unacceptable score were considered to be in need of

improvement and were given one-on-one assistance to promote

improvement.

Week Four

Activities: After being instructed by the writer in the appropriate use of an atlas,

students used the index of an atlas to answer specific questions

about places in the United States. The students then completed a

practice sheet (Appendix L: 87) focusing on this skill. The practice

sheet required the students to use *The World Book Atlas* to locate

specific information.

Purpose: To guide students in the appropriate use of an atlas and give them

practice in using this skill.

Materials: *The World Book Atlas*, a practice sheet and a writing utensil.

Evaluation: The practice sheet was used to evaluate the students'

mastery of this skill. A score of 70% or above was

considered acceptable. Students in need of improvement were given

additional assistance in accomplishing this goal through tutoring, by

the writer.

Week Five

Activities: After modeling and instruction was carried through by the writer, the

students identified the page in the almanac where they would go to

retrieve specific information using an almanac's index which was

on an overhead projector. Students then practiced using the

almanac to retrieve specific information which was detailed on a

practice sheet (Appendix M: 89).

Purpose: To familiarize students with the appropriate use of an almanac and give

them practice in using this skill.

Materials: A practice sheet, an overhead projector, the index of an almanac

that was used on the overhead projector and writing utensils.

Evaluation: The students were evaluated using the aforementioned practice sheet

and teacher observation as they used the almanac.

Week Six

Activities: The students took part in the first of three rotations in which they

used the atlas, encyclopedia or almanac. The students recorded the

information obtained in their portfolios.

Purpose: To retrieve specific information for an essay which the students

completed with their classroom teacher.

Materials: Atlases, encyclopedias, almanacs, writing utensils and portfolios.

Evaluation: The writer rotated within the cooperative groups as a means of

evaluating work taking place. The students' portfolios were also

viewed.

Week Seven

Activities: Students took part in the second of three rotations in order to use

the encyclopedia, atlas or almanac. The information obtained was

recorded in their portfolios.

Purpose: To retrieve specific information pertaining to the topic of their essay.

Materials: Atlases, almanacs, encyclopedias, portfolios and writing utensils.

Evaluation: The writer evaluated the students' use of these materials as

rotations were made within each cooperative group and their

portfolios are viewed.

Week Eight

Activities: The students completed the final rotation for the purpose of using

the atlas, almanac or encyclopedia. They recorded their information in

their portfolios.

Purpose: To retrieve information that was used in their essays.

Materials: Atlases, almanacs, encyclopedias, portfolios and writing utensils.

Evaluations: The writer evaluated the students' use of the reference materials

to retrieve information by rotating in the cooperative groups and

viewing the information they included in their portfolios.

Week Nine

Activity: The students assessed the information obtained in their portfolios.

Purpose: To determine the need for more information and research time or the

satisfaction with what was obtained.

Materials: The student portfolios.

Evaluation: The writer rotated in the cooperative groups to supervise the

students' assessment of the information obtained as well as to

evaluate whether or not they needed extra research time.

Week Ten

Activities: Students worked with their groups to compile information obtained

and decide upon the order in which they wanted to present their essays.

Purpose: To organize the information obtained during their rotations that was

used in their classrooms in completing the essay assigned by

their teachers and to organize the order in which they would present their

essays.

Materials: The portfolios, a sign-up sheet for the presentations and a

writing utensil.

Evaluation: The writer collected and viewed the portfolios for the organization of

ideas. The sign-up sheet was also viewed to ensure that all groups

had been included.

Week Eleven

Activities: Students presented their essays, reported on where they obtained their

information and gave tips on the appropriate use of reference materials

which was recorded by the writer.

Purpose: To provide a culminating activity in which students were given the

opportunity to present the essay they created using information they

obtained in the media center and share ideas on the appropriate use of

reference materials.

Materials: The completed essay, student notes for sharing ideas, blank tapes and

a recorder for recording the tips given by the students.

Evaluation: The writer observed the content of the essays and the ideas shared

by the students as a means of evaluating their success in completing this activity.

Week Twelve

Activity: The students completed two posttests.

Purpose: To assess their knowledge in the area of using reference materials and their attitudes towards these items.

Materials: Student posttests and writing utensils.

Evaluation: A score of 70% or higher on each of the posttests was considered acceptable. Scores were recorded for comparison.

Teacher Target Group

Week One

Activity: Teachers were given an introduction to the project conducted by the writer.

Purpose: To familiarize the teachers with the procedures that took place during the twelve week implementation phase.

Materials: A handout which described the project and the methods that would be used.

Evaluation: The writer used teacher feedback as a means of evaluating their understanding of the project.

Week Two

Activity: The teachers assigned an essay to the students within the classroom

based on them choosing a topic to write on.

Purpose: To provide a tool which enabled the teachers to evaluate the students'

use of reference materials to complete an essay before they were

instructed by the writer in the media center on the appropriate use of

these items.

Materials: Paper and writing utensils.

Evaluation: The writer checked with the classroom teachers to evaluate their

progress towards assigning the aforementioned essays and the

students' completion of these items.

Week Three

Activity: The teachers graded the essays which they assigned to their students

using an essay scoring sheet.

Purpose: To give the teachers the opportunity to focus specifically on evaluating

the ways in which their students used reference materials to complete

an essay before instruction in this area was completed in the media

center.

Materials: Completed student essays, essay scoring sheets and a writing utensil.

Evaluation: The writer evaluated the way in which the teachers used the scoring

sheet to evaluate the essays.

Week Four

Activity: The teachers completed a pretest and a questionnaire.

Purpose: To determine the teachers' knowledge in the area of instructing students

in the use of reference materials and to get their feedback on the way in

which their students use these items.

Materials: Teacher pretests, questionnaires and writing utensils.

Evaluation: The teachers' responses to the questions asked of them on the pretest

were evaluated and recorded by the writer for later comparison.

Week Five

Activity 1: The teachers participated in the first of two in-service sessions which

were conducted by the writer.

Purpose: To instruct the fifth grade teachers in the use of the constructivist method

within lessons.

Materials: A lesson plan prepared by the writer in which the constructivist method

was used for the purpose of demonstrating its use, paper and a writing

utensil.

Evaluation: The writer observed the feedback from teachers as the lesson was

demonstrated.

Week Six

Activity: The teachers demonstrated a lesson for the writer conducted within

their classrooms in which they used the constructivist method to instruct

students in the appropriate use of reference materials.

Purpose: To give the writer the opportunity to view the fifth grade teachers using

information obtained in the in-service session and give them feedback on

their use of the constructivist method.

Materials: The teachers' lessons and a teacher observation checklist (Appendix

N: 91).

Evaluation: Using the previously mentioned checklist, the teachers' use of the

constructivist method to teach reference skills was evaluated. The

seven teachers were viewed as using this method appropriately.

Week Seven

Activity: The teachers signed up for an appropriate day and time for the writer

to visit the classroom.

Purpose: To monitor progress within the classroom pertaining to the project.

Materials: Sign up sheet, paper and writing utensils for the writer and the teachers

to record any pertinent information discussed.

Evaluation: Based on teacher feedback during the visit and observations made, the

writer evaluated the progress made towards working

cooperatively to aid the students in appropriately using reference

materials. The progress was viewed as being satisfactory on the part of

the teachers and the writer.

Week Eight

Activity: The teachers took part in the second in-service session conducted by

the writer.

Purpose: To give teachers the opportunity to gain knowledge in the area of methods available such as the use of advance organizers, visual aids and cooperative groups to teach their students the appropriate use of reference materials.

Materials: A lesson plan created by the writer using the aforementioned methods to teach reference skills, examples of advance organizers, visual aids and cooperative group activities, paper and a writing utensil.

Evaluation: Teacher interaction and feedback was observed as a means of evaluation during the in-service session.

Week Nine

Activities: The teachers assigned an essay to the students within the classroom which incorporated the use of information obtained during research in the media center. The teachers also reviewed the appropriate use of the thesaurus.

Purpose: To provide a tool which enabled the teachers to evaluate and compare the students' use of information obtained from reference materials to complete an essay.

Materials: Paper and a writing utensil.

Evaluation: The writer collaborated with the classroom teachers to evaluate their progress made towards assigning the aforementioned essays.

Week Ten

Activity: The teachers graded the essays which they assigned to their students

using an essay scoring sheet.

Purpose: To give the teachers the opportunity to focus specifically on evaluating

the ways in which their students used the reference materials to complete

an essay, as well as to give them a tool against which they compared an

essay written prior to the students being instructed in the appropriate

use of these items.

Materials: Completed student essays and a writing utensil.

Evaluation: The writer evaluated the way in which the teachers used the scoring

sheet to evaluate the essays. Their use of this item was viewed as being

satisfactory by the writer.

Week Eleven

Activity: The teachers completed a posttest and a post questionnaire.

Purpose: To asses their knowledge of methods available to teach their students the

appropriate use of reference materials as well as their opinions on their

students use of these items.

Materials: Teacher posttests, questionnaires and writing utensils.

Evaluation: The responses to the posttest and questionnaire were recorded and

compared to the same measure distributed at the beginning of the

implementation phase.

Week Twelve

Activities: Teachers gave specific feedback to the writer pertaining to the

project. They also listened to the ideas expressed by the students

pertaining to the use of reference materials.

Purpose: To give the teachers a chance to candidly express their feelings on the

project and listen to the ideas expressed by their students.

Evaluation: Teacher comments were viewed and addressed in person by the

writer.

The activities associated with the practicum were monitored on a daily basis.

Specific feedback from the teacher target group was welcomed during the

implementation phase. Input from the writer's mentor and the media specialist was

also welcomed.

The writer monitored the student target groups' activities on a daily basis

through the viewing of their portfolios and rotations within their groups. The

writer also gave specific written feedback in the form of a note to each

cooperative group concerning their portfolios and progress in general. This note

was placed in the portfolios for the students to view before they started working

the following week. As individual classes were visited during the 12 week period,

progress within the classrooms was monitored.

Formative evaluation was conducted in order to analyze the need for mid-

project corrections. This evaluation was addressed during week 6 using the

aforementioned portfolio checklist. Based on an average score obtained on a scale of 1 to 10, changes were to be made during the sixth week if necessary.

As a means of summative planning and evaluation two measures were taken. First, the portfolio checklist was used during week 12 to assess the contents of the students' portfolios. Second, the posttests and questionnaires administered at the end of the project evaluated the students growth in knowledge during the 12 week implementation phase.

CHAPTER IV

Results

As stated earlier the area in which the practicum site is located is a very

transient one due to new construction taking place at a fast pace within adjoining

areas. At the beginning of the implementation phase, there were 205 students in

the student target group. Due to students moving in and out of the area, resulting

in the loss of students that started out in the target group and the addition of

students to the target group who could not be included in the results because of

the fact that they were not present for the entire twelve week implementation

phase, the number of students in this target group decreased to 167 individuals.

The amount of teachers on the fifth grade level who made up the teacher target

group however, did not change; therefore, the number of individuals in this group

remained at 7.

A multiple choice teacher-made pretest/posttest was administered to the

students at the beginning and end of the implementation phase. This test was used

to satisfy objective one for the student target group. The test consisted of 20

questions which were each worth 5 points for a total of 100. These questions were

a mixture of multiple choice, fill in the blank, short answer and true false. The

purpose of this test was to determine the degree of knowledge students entered

and exited the project with. The scores from the first adminstration of the

pretest/posttest at the beginning of the project were compared to the scores from

the second administration of the pretest/posttest at the end of the project to

determine progress made towards meeting objective one for the student target

group.

In order to report specific findings in an organized fashion, the scores for each

member of the two target groups, then each group as a whole have been placed on

charts. The reporting of student scores (Appendix O: 93) was done by charting

each classes' scores wherein the teachers were assigned a letter (A-G) and the

students were assigned a number. Reports were made for the students, breaking

their scores down by class then calculating them together as a target group. When

reporting by class, the results of the pre and posttests that were administered to

each student have been included on the same chart starting with objective one,

then two, then three. The scores for each objective were then totaled and placed at

the end of the reports on each class to show the results for the target group as a

whole in order to determine the degree to which each objective was met. The

reporting of the teachers' scores (Appendix P: 108) was done by charting each

teacher's score on their pre and posttests to determine the degree to which

objective one was met on one chart, then posting the information and averages

pertaining to objective two on a separate chart for the same purpose.

Objective one stated that within a designated period of 12 weeks, the targeted

fifth grade students will increase their knowledge of the appropriate use of

reference materials by at least 20% as shown by a student pretest/posttest. Each student's test was graded and their scores were recorded (Appendix O: 93). As indicated by the comparison of the students pretest/posttest scores, 18 of the 167 students improved their score by 20%. Some of the students exceeded the specified measure by showing improvement ranging from 25% to 70% above the score they started out with at the beginning of the implementation phase. Two of the 167 students improved by 70%, one improved by 60%, one improved by 55%, two improved by 50%, three improved by 45%, four improved by 40%, five improved by 35%, five improved by 30% and seventeen improved by 25%. This resulted in a total of 58 students who met or exceeded the measures specified in objective one.

In attempting to meet the requirements of objective one, there were students who either scored the same that they did at the beginning of the implementation phase or improved to some degree but not enough to meet the requirements of the objective. Fifteen of the 167 students scored the same at the beginning and end of the implementation phase. Twenty-three of the 167 students improved by 15%, twenty-five improved by 10%, and twenty-three improved by 5%. This resulted in a total of 86 students who showed no change in score or improved by a measure lesser than that which was specified in objective one.

There were a group of students who instead of showing an improvement, showed a decline in their scores from the beginning of the implementation phase to

the end. One of the 167 students showed a decrease in their scores of 35%, one showed a decrease of 30%, three showed a decrease of 20%, one showed a decrease of 15%, seven showed a decrease of 10% and ten showed a decrease of 5%. This resulted in a total of 23 students who showed a decrease in their scores from the beginning of the twelve week implementation phase to the end. As observed through the viewing of the aforementioned scores all of the students in the student target group were not able to meet objective one. A possible reason for the negative results may be that there is no specific program in place at the practicum site to systematically introduce students to these reference skills at lower levels when they are in grades one through four; therefore, their background on the subject was not as it should have been upon entering the fifth grade.

A teacher made use of references pretest/posttest was administered to the students at the beginning and end of the 12 week implementation phase. This test satisfied objectives two and three for the student target group. The purpose of this pretest/posttest was to determine the degree of change in positive attitudes of the student target group, as well as a change in their usage of the reference materials. Positive and negative responses from the first administration of the test were compared to the responses from the second administration of the test. Through this process, the degree to which objectives two and three for the student target group were satisfied, was determined (Appendix O: 93).

Objective two stated that over a period of 12 weeks, the number of students

using reference materials within the library media center at the practicum site will increase by at least 30% as measured by a use of references pretest/posttest and a portfolio checklist. When the pretest was administered to the student target group at the beginning of the implementation phase, 86 of the 167 students indicated that they use reference materials, while 81 of them indicated that they don't use them. At the end of the implementation phase 159 of the 167 students in the student target group indicated that they use reference materials, while 8 indicated that they don't use them. The comparison of the results from each test indicated that 51% of the students stated that they used reference materials at the beginning of the implementation phase, while 95% of them indicated that they use them at the end of the twelve week period. This resulted in an increase of 44% of the students using reference materials to meet their information retrieval needs. This result exceeded the 30% improvement specified in objective two by 14%. When student portfolios were evaluated using the portfolio checklist, all portfolios scored seven out of ten or higher. The high degree of success obtained through the scores on the portfolio checklist may be attributed to the fact that students were monitored and observed on a daily basis in this area and any foreseeable problems were addressed promptly. These measures proved that the criteria specified for improvement in objective two was met.

Objective three stated that during a 12 week period, the targeted fifth grade students will demonstrate 20% more positive attitudes towards lessons centered

around the appropriate use of reference materials and reference materials themselves as shown by positive responses on a use of references pretest/posttest. When the pretest was administered to the students at the beginning of the implementation phase, an average of 89 of the 167 responses demonstrated positive attitudes towards learning about and using reference materials, while 78 showed negative attitudes. At the end of the implementation phase when the posttest was administered, 119 of the 167 responses demonstrated positive attitudes towards learning about and using reference materials, while 48 showed negative attitudes. This indicated that 53% of student responses indicated positive attitudes at the beginning of the implementation phase, while 71% of the responses indicated positive attitudes at the end of the twelve week period. This resulted in a 18% improvement in the positive attitudes of students over the twelve week period. This result is 2% less than the 20% measure specified to meet objective three. Although some improvement was shown, the criteria specified in objective three was not met due to the 2% difference in the criteria specified and the actual improvement.

An essay type pretest/posttest was administered to the teacher target group during the implementation phase of the practicum. This test was used to satisfy objective one for the teacher target group. The purpose of the test was to determine the teacher target groups' knowledge of methods available to best meet the needs of the students in the student target group. The test required that the

teachers list four methods that they were aware of to meet this need. Each method
was worth twenty-five points for a total of 100. The scores from the first
administration of the test were compared to the scores from the second
adminstration of the test to determine the degree of progress made towards
meeting the criteria detailed in objective one for the teacher target group.

Objective one stated that over a period of 12 weeks, the targeted fifth grade
teachers will increase their knowledge of methods available to teach their students
the appropriate use of reference materials by at least 20% as measured by a teacher
pretest/posttest. The results of the teachers' pretests, posttests and questionnaires
were calculated individually and recorded for comparison (Appendix P: 108). At
the beginning of the implementation phase, Teacher A showed an improvement of
50%, Teacher B showed an improvement of 25%, Teacher C showed an
improvement of 50%, Teacher D showed an improvement of 25%, Teacher E
showed an improvement of 50%, Teacher F showed an improvement of 25% and
Teacher G showed an improvement of 50%. The average of all scores at the
beginning of the implementation phase was 46%. This average changed to 86% by
the end of the implementation phase. This resulted in an average increase of 40%.
Each teacher met the criteria specified in objective one for their target group.

An essay scoring sheet was given to the teachers to be used when evaluating
the students essays. This sheet consisted of ten items that were each worth ten
points for a total of 100. A fifth grade teacher questionnaire was also administered

to the teacher target group during the implementation phase of this project. The purpose of this questionnaire was to determine changes in the opinions of the fifth grade teachers pertaining to the students' use of reference materials. Results from the first administration of the essays and questionnaires were compared to the results from the second administration of these items to determine the degree to which objective two for the teacher target group was met.

Objective two stated that during a 12 week period, the targeted fifth grade teachers will indicate an increase of at least 20% in their students' use of reference materials as shown by a fifth grade teacher pre and post questionnaire and a pre and post essay scoring sheet. The pre and post questionnaire indicated that five of the seven teachers felt that their students showed an increase in their use of reference materials. The two that did not show an increase, started out indicating that their students used these items to a high degree and had no measure to choose from that would exceed that. An essay scoring sheet was used to assess the students' use of reference materials to complete an essay. An essay was assigned by the classroom teachers and written by the students during the second week of the implementation phase. Another essay was assigned during the ninth week of the implementation phase. Both of these essays were scored using the essay scoring sheet. The scores from both administrations of the essay were compared to evaluate the degree to which objective two for the teacher target group was met. The students average score on their first essay given before instruction in the area

of using reference materials was 49%. After instruction, the students average score increased to 70%. The 21% difference in these scores resulted in the criteria specified in objective two being met and exceeded by 1%.

As stated earlier a checklist was used to assess the need for any mid-project corrections. The portfolio of each cooperative group was evaluated during week six of the implementation phase. Using the ten measures detailed on the checklist, acceptable progress of the project was assessed. If the majority of the student target groups scored at least seven out of ten points on the checklist where each measure was worth one point, the project was viewed as progressing at an acceptable level and would continue in the manner planned. If the majority of the groups scored lower than seven out of ten points on the checklist, the project would be deemed as being in need of corrections and this would have been done during the sixth week. This evaluation proved to be satisfactory for all groups and no mid-project corrections were necessary based on the acceptable activity observed when scoring the portfolios. This checklist was also used during week twelve as a means of evaluating the content of the portfolios at the end of the project. This evaluation tool was therefore used to assess the need for mid-project corrections as well as to aid in determining the degree to which objective two for the student target group was met.

CHAPTER V

Recommendations

The writer recommends that this project be used in the future as an in-service program for the fifth grade level. If this project is used for this purpose in the future, students will gain needed exposure and practice using specific reference materials appropriately before entering middle school. This will create active fact finders.

The main adjustment that may be viewed as an expansion that is recommended for this project is that it be started at the first grade level on a lower scale and gradually increase in complexity through the grade levels to the point of this project in the fifth grade. Added difficulty is attached to this skill if students do not have the basic background to deal with the appropriate use of reference materials. The project would reach its highest potential if a specific area of reference materials was presented at each level so that when students enter the fifth grade they have the background needed to succeed in a project such as the one highlighted in this practicum. They would be given the opportunity to place the pieces of the puzzle given to them at each grade level along the way into a comprehensive whole that would carry them through the information highway of their educational careers.

It is also recommended that this project be used as the main focus in creating

56

in-service training sessions at a lower level and on a smaller scale for grades one

through four. If this project is used as the main focus, then the information that

students gain on their way up through the grade levels in the area of the

appropriate use of reference materials may once again be used as building blocks

for this project. This would prove beneficial, it is believed, in more positive results

for this project.

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Appendixes

Appendix A

Media Specialist Interview

Appendix A

Media Specialist Interview

1. What is the most positive characteristic of your library media program?

   " The fact that the students are so aware of the literature and they apprectiate it."

2. What is the most negative characteristic of your library media program?

   "The fact that I have to wear so many hats. Sometimes some parts of the program suffer because of it."

3. What are some of the programs that you offer?

   "We offer reading programs such as Reading Across Broward, Sunshine State, Young Readers Award, Book It, Accelerated Reader, and B Js Book Bonanza."

4. Do the students take advantage of the reading programs that you offer?

   "Yes they do, to a great extent."

5. How would you rate the quality of your collection?

   "I would say that it is pretty good. It is one of the largest for an elementary school."

6. How would you rate the circulation procedures?

   "Since we have started using Bibliofile it has been quite good."

7. In what area(s) do you feel students need most improvement in relation to the media center?

   "Students need most improvement in reference skills, overdues and taking care of the library books that they check out."

Appendix B

Media Center Questionnaire

Appendix B

Media Center Questionnaire

Teachers
Fall 1997

Directions : Please circle your response to each question.

1. To what extent do your students take advantage of reading programs offered through the media center?

	Responses
A. High	60%
B. Average	30%
C. Low	10%

2. In what area do you feel students need most improvement within the media center?

	Responses
A. Using reading programs	10%
B. Using reference materials	83%
C. Borrowing materials	7%

3. How would you rate the quality of the collection in the media center?

	Responses
A. High	65%
B. Average	27%
C. Low	8%

4. How would you rate the circulation procedures in the media center?

	Responses
A. High	80%
B. Average	16%
C. Low	4%

Appendix C

Student Questionnaire

Appendix C

Student Questionnaire of 205 Fifth Graders

Fall 1997

Directions: Please give a written response to each of the following questions.

1. Do you know how to use the following reference materials? (Yes or No)

A Dictionary
An Almanac   **Average Responses**
An Atlas
An Encyclopedia   **Yes: 30%   No: 70%**
A Thesaurus

2. Are you good at using these materials? Why or Why not?
   Responses

3. Do you have these reference materials at home? (Yes or No)

A Dictionary
An Almanac   **Average Responses**
An Atlas
An Encyclopedia   **Yes: 28%   No 72%**
A Thesaurus

4. Do you use reference materials at school? Why or Why not?
   Responses
   Yes: 19%   No: 81%

5. Do you use reference materials at home? Why or Why not?
   Responses
   Yes: 25%   No: 75%

6. Do you enjoy learning about reference materials? Why or Why not?
   Responses
   Yes: 33%   No: 67%

Appendix D

Student Pretest/Posttest

Appendix D

Student Pretest/Posttest

Name: _____ Date: _____

Read the directions listed for each section carefully then follow them.
Section A: Multiple Choice
Directions: Circle the correct answer to each question.

1. What may we find in an Atlas?

   A. Up-to-date facts, charts and tables.
   B. Pronunciations and meanings of words.
   C. Information on many things, people, places and ideas.
   D. A collection of maps.
   E. Words with similar meanings (synonyms).

2. What may we find in an Almanac?

   A. Pronunciations and meanings of words.
   B. Up-to-date facts, charts and tables.
   C. Words with similar meanings (synonyms).
   D. Information on many things, people, places and ideas.
   E. A collection of maps.

3. What may we find in a Dictionary?

   A. Up-to-date facts, charts and tables.
   B. A collection of maps.
   C. Information on many things, people, places and ideas.
   D. Pronunciations and meanings of words.
   E. Words with similar meanings (synonyms).

4. What may we find in an Encyclopedia?

   A. Information on many things, people, places and ideas.
   B. A collection of maps.
   C. Up-to-date facts, charts and tables.
   D. Pronunciations and meanings of words.
   E. Words with similar meanings (synonyms).

5. What may we find in a Thesaurus?

    A. Up-to-date facts, charts and tables.
    B. Pronunciations and meanings of words.
    C. Information on many things, people, places and ideas.
    D. A collection of maps.
    E. Words with similar meanings (synonyms).

Section B: Fill in the Blank

Directions: List the name of the best reference book which you would use to find
the answers to the following questions.

6. What were the top ten movies for 1995? _____

7. What were the events leading to the Civil War? _____

8. Where and when was George Bush born? _____

9. What is a synonym for the word wonderful? _____

10. What is the pronunciation for the word photosynthesis? _____

11. What does Europe look like? (Its shape) _____

12. What is the meaning of the word galactic? _____

13. What word may I use instead of nice in a paragraph? _____

14. What were the most popular cars in 1996? _____

Section C: Short Answer

Directions: Write the answers to the following questions on the lines provided.

15. In what part of an Almanac is the index found?

_____

_____

16. What are the two indexes in an Almanac called?

_____

_____

Section D: True or False

Directions: Place the word true next to the statements that are correct and false next to the statements that are not correct.

17. An Almanac is in alphabetical order. _____

18. You need to use the index in order to locate the place that you are looking for in an Atlas. _____

19. When looking for information on a person using an Encyclopedia, you must look for the first name of the person. _____

20. In words with two or more parts that are not the names of people, look for the first part when using an Encyclopedia. _____

Appendix E

Use of References Pretest/Posttest

Appendix E

Use of References Pretest/Posttest

Name: _____ Date: _____ Teacher: _____

Directions: Please respond to each of the following items, then explain your
   choice.

1a. Would you say that you are good at using reference materials? Yes or No
1b. Why or Why not?

_____

_____

2a. Do you use the reference materials at school? Yes or No
2b. Why or Why not?

_____

_____

3a. Do you enjoy learning about reference materials? Yes or No
3b. Why or Why not?

___ I don't see a reason why I have to learn about using reference materials.
___ I don't know what is in each book.
___ I think it is boring.
___ The librarian will help me.
___ I don't read well enough.
___ Other. Explain.

_____

_____

Appendix F

Portfolio Checklist

Appendix F

Portfolio Checklist

Name of Group: _____

Date: _____

_____ 1. Appearance of the portfolio is neat.

_____ 2. Items in the portfolio are understandable.

_____ 3. Individuals assigned jobs have been completing their duties.

_____ 4. Evidence is shown that students used the Atlas appropriately.

_____ 5. Evidence is shown that students used the Almanac appropriately.

_____ 6. Evidence is shown that students used the Encyclopedia appropriately.

_____ 7. Evidence is shown that students used the Dictionary appropriately.

_____ 8. Evidence is shown that students used the Thesaurus appropriately.

_____ 9. All items required to be in the portfolio are included.

_____ 10. Evidence is shown that students are actively using reference materials to gather information.

Score: _____

Appendix G

Teacher Pretest Posttest

Appendix G

Teacher Pretest/Posttest

Name: _____ Date: _____

Directions: List and describe your answers to the following questions.

1. How are the following items used to teach your students the appropriate use of reference materials? Please use the back if more room is needed.

   A. Atlas: _____

   B. Almanac: _____

   C. Thesaurus: _____

   D. Encyclopedia: _____

   E. Dictionary: _____

2. List and describe methods you are aware of for teaching your students the appropriate use of reference materials.

   1. _____

   _____

   2. _____

   _____

   3. _____

   _____

   4. _____

   _____

Appendix H

Fifth Grade Teacher Pre and Post Questionnaire

Appendix H

Fifth Grade Teacher Pre and Post Questionnaire

Name: _____   Date: _____

Directions: Please circle your response to the following questions.

1. To what degree do your students use reference materials to complete class assignments?

   A. Low

   B. Average

   C. High

2. To what degree do your students use reference materials successfully in completing their classroom projects?

   A. Low

   B. Average

   C. High

Appendix I

Pre and Post Essay Scoring Sheet

Appendix I

Pre and Post Essay Scoring Sheet

Directions: Place the amount of points assigned to each measure which should be present in the essay being scored.

Name of Student _____

Name of Individual Scoring the Essay _____

Date the Essay was Completed _____

1. _____ Evidence of the use of an atlas to obtain information is shown.

2. _____ Evidence of the use of an almanac to obtain information is shown.

3. _____ Evidence of the use of an encyclopedia to obtain information is shown.

4. _____ Evidence of the use of a dictionary to obtain information is shown.

5. _____ Evidence of the use of a thesaurus to locate synonyms for words is shown.

6. _____ Ideas expressed are organized.

7. _____ Ideas expressed are clear.

8. _____ Topic chosen is linked to states studied in social studies as directed.

9. _____ Assignment completed in a neat fashion.

10. ____ Evidence of proofreading is evident.

Score _____

Appendix J

Cooperative Group Activity

Appendix J

Student Cooperative Group Activity

Directions: Place responses to each of the following directions in the spaces
provided. Use the back of this paper if more room is needed.

1. Write the first and last name of each person assigned to your group.

2. Use the first letter of each person's first name to create a name for your group.

3. Assign each of the following jobs to at least one person in your group. More
than one person may complete the same job. Definitions for each job were
given before this assignment started. If you need to hear them again please
ask. We need to make sure we have chosen the best person for each job.

Secretary: Cheerleader:
Supply Retriever: Group Leader:
Reporter: Peace Maker:

4. Find a state that your group would like to focus on for the upcoming report.

   How did your group decide on this state.

5. List some things that your group already knows about this state.

6. List some things that your group would like to find out about this state.

Appendix K

Encyclopedia Practice Sheet

Appendix K

Encyclopedia Practice Sheet

Remember the following rules when looking up a topic in the encyclopedia.

* Look for the last name of a person.

* Look under the name, not the title for a titled person.

* When searching for an abbreviation, look for the word as though it were spelled in full.

* In words of two or more parts that are not the names of people, look for the first part.

Directions: Go to the reference area and use the encyclopedias to locate information on the following topics. Write the volume and page number that you find the information in.

1. Prince Charles _____

2. Florida _____

3. The United States _____

4. The Statue of Liberty _____

5. Mr. Bill Clinton _____

Appendix L

Atlas Practice Sheet

Appendix L

Atlas Practice Sheet

Name _____

Date _____

Tip: An atlas is a book of maps and related geographical facts. An Atlas often contains several kinds of maps for one area. Each map may give information about one feature of the area, such as rainfall, temperature, or natural resources.

Use an atlas from the reference area to locate the following information. Write the name of the atlas and the page number where the information was found.

1. In what state would you find Atlanta?

2. What is the longitude of Ft. Lauderdale?

3. What is the latitude of Orlando?

4. What is the pronunciation of Fairlee?

Appendix M

Almanac Practice Sheet

Appendix M

Almanac Practice Sheet

Name _____

Date _____

Tips: An almanac is published once a year. However, it includes information for previous years. It contains many lists and statistical tables on several different subjects. An almanac is not in alphabetical order. Therefore, you need to use the index to locate information.

Directions: Use an almanac from the reference area to answer the following questions. Write the name of the almanac used and the page number on which the information is found.

1. What is the zip code for Ft. Lauderdale, Florida?

2. What is the price of potatoes in the United States?

3. What is the postal rate to mail a letter to the Caribbean?

4. How many tomatoes did the United States consume in one year?

Appendix N

Teacher Observation Checklist

Appendix N

Teacher Observation Checklist

Name of Teacher _____

Name of Individual Conducting Observation _____

Date of Observation _____

Satisfactory = S   Unsatisfactory = U

1. _____ The constructivist method was utilized.

2. _____ The students were given the opportunity to decide the direction and scope of the lesson.

3. _____ The activities were centered around the students.

4. _____ The lesson met the specified objective.

5. _____ Students seemed interested in the content of the lesson.

6. _____ The students were actively involved in the lesson.

Teacher's Signature _____

Observer's Signature _____

Appendix O

Student Target Group Pre and
Posttest Scores for Objectives 1, 2, and 3

Appendix O

Student Target Group Pre and Posttest Scores for Objectives 1, 2, and 3

Teacher A

Student #	Obj. 1 Pretest	Obj. 1 Posttest	Change	Obj. 2 Pretest	Obj. 2 Posttest	Change	Obj. 3 Pretest	Obj. 3 Posttest	Change
1	40%	80%	40% +	N	Y	+	YY	YY	Same
2	5%	20%	15% +	N	N	Same	NY	NN	-
3	15%	65%	50% +	Y	Y	Same	YY	YN	-
4	5%	30%	25% +	Y	N	-	NN	NY	+
5	20%	25%	5% +	N	Y	+	YY	YY	Same
6	10%	10%	Same	N	Y	+	NN	YY	+
7	10%	50%	40% +	Y	Y	Same	NY	YN	Same
8	45%	60%	15% +	Y	N	-	NN	NY	+
9	10%	80%	70% +	Y	Y	Same	NN	NN	Same
10	25%	15%	10% -	N	Y	+	NN	NY	+
11	20%	30%	10% +	Y	Y	Same	YY	NN	-
12	5%	30%	25% +	N	Y	+	NY	NY	Same
13	10%	35%	25% +	Y	Y	Same	NY	YN	Same
14	40%	50%	10% +	Y	N	-	YY	NY	-
15	25%	25%	Same	Y	Y	Same	NY	NN	-
Totals				N - 6	N - 4		N - 15	N - 16	
				Y - 9	Y - 11		Y - 15	Y - 14	

Totals changes for objective 1: +70% - 1, +50% - 1, +40% - 2, +25% - 3, +15% - 2, +10% - 2, +5% - 1
Same - 2
-10% - 1

Appendix O

Student Target Group Pre and Posttest Scores for Objectives 1, 2, and 3

Teacher B

Student #	Obj. 1 Pretest	Obj. 1 Posttest	Change	Obj. 2 Pretest	Obj. 2 Posttest	Change	Obj. 3 Pretest	Obj. 3 Posttest	Change
1	65%	70%	5% +	N	Y	+	NN	YY	+
2	50%	65%	15% +	N	Y	+	NN	YY	+
3	85%	90%	5% +	N	Y	+	NN	YN	+
4	15%	55%	40% +	N	Y	+	NN	NY	+
5	88%	93%	5% +	Y	Y	Same	YN	YY	+
6	85%	65%	20% -	N	Y	+	NN	YY	+
7	85%	90%	5% +	N	Y	+	NN	YN	+
8	85%	95%	10% -	N	Y	+	YN	YY	+
9	80%	75%	5% -	Y	Y	Same	NN	NN	Same
10	70%	75%	5% +	Y	Y	Same	NN	YY	+
11	65%	90%	25% +	N	Y	+	NY	YY	+
12	60%	80%	20% +	N	Y	+	YN	YY	+
13	55%	80%	25% +	Y	Y	Same	YN	NY	Same
14	50%	65%	15% +	N	Y	+	NN	NY	+
15	80%	95%	15% +	Y	Y	Same	NN	NN	Same
16	25%	85%	60% +	N	Y	+	NN	YY	+
17	85%	95%	10% +	N	Y	+	YN	YY	+
18	75%	75%	Same	Y	Y	Same	NN	YN	+
19	65%	90%	25% +	N	Y	+	NN	YY	+
20	65%	90%	25% +	Y	Y	Same	YN	YY	+
Totals				N - 13	N - 0		N - 33	N - 10	
				Y - 7	Y - 20		Y - 7	Y - 30	

Total changes for objective 1: +60% - 1, +40% - 1, +25% - 4, +20% - 1, +15% - 3, +10% - 1, +5% - 5
Same - 1
-20% - 1, -10% - 1, -5% - 1

Appendix O

Student Target Group Pre and Posttest Scores for Objectives 1, 2, and 3

Teacher C

Student #	Obj. 1 Pretest	Obj. 1 Posttest	Change	Obj. 2 Pretest	Obj. 2 Posttest	Change	Obj. 3 Pretest	Obj. 3 Posttest	Change
1	60%	30%	30% -	Y	Y	Same	YY	NN	-
2	30%	60%	30% +	N	N	Same	NN	NN	-
3	60%	80%	20% +	Y	Y	Same	NY	NY	Same
4	60%	70%	10% +	Y	Y	Same	NN	YN	+
5	65%	80%	15% +	Y	Y	Same	YY	YY	Same
6	80%	85%	5% +	Y	Y	Same	YN	YN	Same
7	75%	95%	20% +	Y	Y	Same	YY	YY	Same
8	35%	80%	45% +	Y	Y	Same	YY	YN	-
9	70%	85%	15% +	Y	Y	Same	NN	NN	Same
10	55%	85%	30% +	Y	Y	Same	NN	YN	+
11	45%	60%	15% +	Y	Y	Same	YN	YY	+
12	60%	90%	30% +	Y	Y	Same	NY	NY	Same
13	65%	85%	20% +	N	Y	+	NN	NN	Same
14	75%	90%	15% +	Y	Y	Same	YY	YN	-
15	45%	80%	35% +	Y	Y	Same	YN	YN	Same
16	85%	80%	5% -	Y	Y	Same	NN	NN	Same
17	80%	80%	Same	Y	Y	Same	YY	YY	Same
18	70%	80%	10% +	Y	Y	Same	YY	NY	-
19	65%	90%	25% +	Y	Y	Same	NN	YN	+
20	80%	90%	10% +	Y	Y	Same	YY	YY	Same
21	70%	95%	25% +	Y	Y	Same	YY	YN	-
22	50%	60%	10% +	Y	Y	Same	NY	YN	Same
23	80%	70%	10% -	Y	Y	Same	NY	YY	+
24	70%	75%	5% +	N	Y	+	NY	YN	Same

Appendix O

Student Target Group Pre and Posttest Scores for Objectives 1, 2, and 3

Teacher C

Student #	Obj. 1 Pretest	Obj. 1 Posttest	Change	Obj. 2 Pretest	Obj. 2 Posttest	Change	Obj. 3 Pretest	Obj. 3 Posttest	Change
25	65%	80%	15% +	Y	Y	Same	NN	YN	+
26	20%	35%	15% +	N	Y	+	NN	YY	+
Totals				N - 4	N - 1		N - 26	N - 24	
				Y - 22	Y - 25		Y - 26	Y - 28	

Total changes for objective 1: +45% - 1, +35% - 1, +30% - 3, +25% - 2, +20% - 3, +15% - 6, +10% - 4, +5% - 2
Same - 1
-30% - 1, -10% - 1, -5% - 1

Appendix O

Student Target Group Pre and Posttest Scores for Objectives 1, 2, and 3

Teacher D

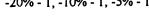| Student #	Obj. 1 Pretest	Obj. 1 Posttest	Change	Obj. 2 Pretest	Obj. 2 Posttest	Change	Obj. 3 Pretest	Obj. 3 Posttest	Change
1	80%	85%	5% +	N	Y	+	YY	YY	Same
2	80%	95%	15% +	Y	Y	Same	NN	YN	+
3	70%	90%	20% +	N	Y	+	YY	YY	Same
4	80%	90%	10% +	Y	Y	Same	YY	YY	Same
5	70%	90%	20% +	Y	Y	Same	YY	YY	Same
6	80%	85%	5% +	Y	Y	Same	YN	YY	+
7	45%	50%	5% +	Y	Y	Same	NY	NN	-
8	90%	90%	Same	N	Y	+	NY	YN	Same
9	25%	95%	70% +	Y	Y	Same	YN	YY	+
10	65%	80%	15% +	Y	Y	Same	NN	YN	+
11	80%	90%	10% +	N	Y	+	YN	YN	Same
12	65%	95%	30% +	Y	Y	Same	YN	YN	Same
13	75%	95%	20% +	N	Y	+	NN	YN	+
14	60%	85%	25% +	Y	Y	Same	NY	YN	Same
15	80%	90%	10% +	N	Y	+	YY	YY	Same
16	65%	85%	20% +	Y	Y	Same	YY	YY	Same
17	60%	85%	25% +	Y	Y	Same	YN	YN	Same
18	70%	60%	10% -	N	Y	+	YN	YY	Same
19	75%	80%	5% -	N	Y	+	NN	NN	Same
20	85%	80%	5% -	N	Y	+	YN	NN	-
21	70%	70%	Same	Y	Y	Same	NN	NN	Same
22	70%	85%	15% +	Y	Y	Same	NY	YN	Same
23	85%	85%	Same	Y	Y	Same	YY	YY	Same
24	75%	75%	Same	N	Y	+	NN	YN	+

Appendix O

Student Target Group Pre and Posttest Scores for Objectives 1, 2, and 3

Teacher D

Student #	Obj. 1 Pretest	Obj. 1 Posttest	Change	Obj. 2 Pretest	Obj. 2 Posttest	Change	Obj. 3 Pretest	Obj. 3 Posttest	Change
25	65%	95%	30% +	N	Y	+	YY	YY	Same
26	65%	80%	15% +	Y	Y	Same	YY	YY	Same
27	50%	75%	25% +	N	Y	+	YN	NN	-
28	80%	85%	5% +	N	Y	+	NY	YN	Same
29	45%	90%	45% +	N	Y	+	NY	YY	+
Totals				N - 14	N - 0		N - 26	N - 21	
				Y - 15	Y - 29		Y - 32	Y - 37	

Total changes for objective 1: +70% - 1, +45% - 1, +30% - 2, +25% - 3, +20% - 4, +15% - 4, +10% - 3, +5% - 4
Same - 4
-10% - 1, -5% - 2

Appendix O

Student Target Group Pre and Posttest Scores for Objectives 1, 2, and 3

Teacher E

Student #	Obj. 1 Pretest	Obj. 1 Posttest	Change	Obj. 2 Pretest	Obj. 2 Posttest	Change	Obj. 3 Pretest	Obj. 3 Posttest	Change
1	65%	70%	5% +	Y	Y	Same	NN	YY	+
2	80%	85%	5% +	Y	Y	Same	YN	YY	+
3	55%	90%	35% +	Y	Y	Same	YY	YN	-
4	65%	85%	20% +	Y	Y	Same	YN	YY	+
5	70%	75%	5% +	Y	Y	Same	YY	YY	Same
6	55%	80%	25% +	Y	Y	Same	NN	YY	+
7	45%	70%	25% +	Y	Y	Same	YN	YN	Same
8	40%	60%	20% +	Y	Y	Same	NY	NY	Same
9	80%	90%	10% +	N	Y	+	NN	NN	Same
10	70%	90%	20% +	N	Y	+	YY	YY	Same
11	85%	90%	5% +	N	Y	+	YY	YY	Same
12	70%	80%	10% +	Y	Y	Same	NN	YN	+
13	70%	70%	Same	Y	N	-	YN	YN	Same
14	70%	80%	10% +	N	Y	+	NN	YN	+
15	85%	80%	5% -	N	Y	+	YY	YY	Same
16	70%	75%	5% +	N	Y	+	YN	YN	Same
17	15%	70%	55% +	Y	Y	Same	YN	YY	+
18	65%	70%	5% +	N	Y	+	NN	YY	+
19	85%	90%	5% +	Y	Y	Same	YN	YN	Same
20	45%	45%	Same	N	N	Same	NN	YY	+
21	50%	65%	15% +	Y	Y	Same	YY	YY	Same
22	50%	85%	35% +	N	Y	+	NN	YY	+
23	50%	95%	45% +	Y	Y	Same	YY	YY	Same
24	50%	90%	40% +	Y	Y	Same	YN	NN	-

Appendix O

Student Target Group Pre and Posttest Scores for Objectives 1, 2, and 3

Teacher E

Student #	Obj. 1 Pretest	Obj. 1 Posttest	Change	Obj. 2 Pretest	Obj. 2 Posttest	Change	Obj. 3 Pretest	Obj. 3 Posttest	Change
Totals				N - 9	N - 2		N - 25	N - 12	
				Y - 15	Y - 22		Y - 23	Y - 36	

Total changes for objective 1: +55% - 1, +45% - 1, +40% - 1, +35% - 2, +25% - 2, +20% - 3, +15% - 1, +10% - 3,
 +5% - 7
 Same - 2
 -5% - 1

Appendix O

Student Target Group Pre and Posttest Scores for Objectives 1, 2, and 3

Teacher F

Student #	Obj. 1 Pretest	Obj. 1 Posttest	Change	Obj. 2 Pretest	Obj. 2 Posttest	Change	Obj. 3 Pretest	Obj. 3 Posttest	Change
1	70%	80%	10% +	Y	Y	Same	NY	YY	+
2	75%	85%	10% +	Y	Y	Same	YN	NY	Same
3	90%	100%	10% +	Y	Y	Same	YY	YN	-
4	55%	75%	20% +	N	Y	+	YY	YY	Same
5	60%	75%	15% +	N	Y	+	YY	YY	Same
6	70%	85%	15% +	N	Y	+	YY	YY	Same
7	40%	90%	50% +	N	Y	+	NN	YY	+
8	75%	95%	20% +	Y	Y	Same	YY	YY	Same
9	75%	75%	Same	Y	Y	Same	YN	YN	Same
10	70%	90%	20% +	N	Y	+	YN	YY	+
11	80%	90%	10% +	N	Y	+	YN	YY	+
12	75%	85%	10% +	Y	Y	Same	YN	YY	+
13	95%	85%	10% -	N	Y	+	YY	YY	Same
14	70%	80%	10% +	N	Y	+	YY	YN	-
15	30%	55%	25% +	Y	Y	Same	YY	YY	
16	65%	75%	10% +	Y	Y	Same	YN	YY	+
17	80%	90%	10% +	N	Y	+	YN	YY	+
18	75%	90%	15% +	N	Y	+	YN	YN	Same
19	65%	75%	10% +	N	Y	+	YY	YY	Same
20	80%	95%	15% +	N	Y	+	YY	YY	Same
21	75%	75%	Same	N	Y	+	YN	YY	+
22	75%	70%	5% -	Y	Y	Same	YN	YY	+
23	20%	25%	5% +	N	Y	+	YY	YY	Same
Totals				N - 14	N - 0		N- 13	N - 5	

Appendix O

Student Target Group Pre and Posttest Scores for Objectives 1, 2, and 3

Teacher F

Student #	Obj. 1 Pretest	Obj. 1 Posttest	Change	Obj. 2 Pretest	Obj. 2 Posttest	Change	Obj. 3 Pretest	Obj. 3 Posttest	Change
				Y - 9	Y - 23		Y - 33	Y - 41	

Total changes for objective 1: +50% - 1, +25% - 1, +20% - 3, +15% - 4. +10% - 9, +5% - 1
Same - 2
-10% - 1, -5% - 1

Appendix O

Student Target Group Pre and Posttest Scores for Objectives 1, 2, and 3

Teacher G

Student #	Obj. 1 Pretest	Obj. 1 Posttest	Change	Obj. 2 Pretest	Obj. 2 Posttest	Change	Obj. 3 Pretest	Obj. 3 Posttest	Change
1	80%	85%	5% +	N	Y	+	NY	YY	+
2	40%	75%	35% +	N	Y	+	NY	YY	+
3	75%	85%	10% +	N	Y	+	NY	YY	+
4	85%	75%	10% -	Y	Y	Same	YY	YY	Same
5	80%	85%	5% +	N	Y	+	YY	YN	-
6	70%	50%	20% -	Y	Y	Same	YN	YN	Same
7	55%	80%	25% +	Y	Y	Same	NY	YY	+
8	75%	85%	10% +	N	Y	+	YY	YY	Same
9	45%	65%	20% +	N	N	Same	NY	YN	Same
10	95%	85%	10% -	N	Y	+	NY	YY	+
11	65%	80%	15% +	Y	Y	Same	YY	YY	Same
12	70%	70%	Same	N	Y	+	YY	YN	-
13	80%	75%	5% -	N	Y	+	NY	YY	+
14	65%	60%	5% -	N	Y	+	NY	YY	+
15	70%	50%	20% -	Y	Y	Same	NY	YY	+
16	75%	95%	20% +	N	Y	+	NN	NN	Same
17	35%	70%	35% +	N	Y	+	YN	YY	+
18	80%	95%	15% +	N	Y	+	YY	YY	Same
19	75%	95%	20% +	N	Y	+	NN	YY	+
20	80%	45%	35% -	N	Y	+	YY	YY	Same
21	60%	45%	15% -	N	Y	+	YN	YY	+
22	70%	85%	15% +	Y	Y	Same	YY	YN	-
23	90%	85%	5% -	N	Y	+	YY	YY	Same
24	65%	65%	Same	N	Y	+	YY	YY	Same

Appendix O

Student Target Group Pre and Posttest Scores for Objectives 1, 2, and 3

Teacher G

Student #	Obj. 1 Pretest	Obj. 1 Posttest	Change	Obj. 2 Pretest	Obj. 2 Posttest	Change	Obj. 3 Pretest	Obj. 3 Posttest	Change
25	55%	50%	5% -	Y	Y	Same	YY	YY	Same
26	75%	80%	5% +	N	Y	+	NY	YY	+
27	70%	70%	Same	N	Y	+	NY	YY	+
28	60%	80%	20% +	Y	Y	Same	YY	YY	Same
29	65%	90%	25% +	N	Y	+	YY	YN	-
30	85%	95%	10% +	Y	Y	Same	YY	YY	Same
Totals				N - 21	N - 1		N - 18	N - 8	
				Y - 9	Y - 29		Y - 42	Y - 52	.

Total changes for objective 1: +35% - 2, +25% - 2, +20% - 4, +15% - 3, +10% - 3, +5% - 3
Same - 3
-35% - 1, -20% - 2, -15% - 1, -10% - 2, -5% - 4

Appendix O

Student Target Group Pre and Posttest Scores for Objectives 1, 2, and 3

Objective One Totals

Degree of Change	Number of Students Making Change	Totals in Specific Areas
+70%	2	
+60%	1	
+55%	1	
+50%	2	
+45%	3	
+40%	4	
+35%	5	
+30%	5	
+25%	17	
+20%	18	**Total # Meeting Obj.1 58**
+15%	23	
+10%	25	
+5%	23	
No Improvement (Same)	15	**Total # of Students Improving but Not Meeting Obj. 1 and # Staying the Same 86**
-35%	1	
-30%	1	
-20%	3	

Appendix O

Student Target Group Pre and Posttest Scores for Objectives 1, 2, and 3

Objective One Totals

-15%	1	
-10%	7	
-5%	10	**Total # Showing Decline 23**
Total # of Students	167	

Objective Two Totals
Pretest
 Total Number of responses: N - 81
                             Y - 86
Average Perrcentage of students answering positively: 51%
Posttest
 Total Number of responses: N- 8
                             Y - 159
Average Percentage of students answering posotively: 95%
Degree of change in positive responses about using refernce materials: 44%

Objective Three Totals
 Pretest
 Total Number of responses: N - 156
                            Y - 178
 AveragePercentage of students answering positively: 53%
Posttest
Total number of responses: N- 96
                           Y - 238
Average Percentage of students answering positively: 71%
Degree of change in positive responses about reference materials and learning about them: 18%

Appendix P

Teacher Target Group Scores

Appendix P

Teacher Target Group Scores

Objective One Totals

Teacher	Obj. 1 Pretest	Obj. 1 Posttest	Change
A	25%	75%	+ 50%
B	75%	100%	+ 25%
C	50%	100%	+50%
D	50%	75%	+25%
E	50%	100%	+50%
F	25%	50%	+ 25%
G	50%	100%	+ 50%
Average Totals	**46%**	**86%**	**+ 40%**

Appendix P

Teacher Target Group Scores

Objective One Totals

Teacher	Obj. 2 Pre Quest.	Obj. 2 Post Quest.	Change	Obj. 2 Pretest Averages	Obj. 2 Posttest Averages	Change
A	1. L 2. A	1. H 2. H	1. + 2. +	50%	70%	+ 20%
B	1. A 2. L	1. H 2. H	1. + 2. +	60%	70%	+10%
C	1. A 2. A	1. H 2. H	1. + 2. +	50%	80%	+ 30%
D	1. A 2. A	1. H 2. H	1. + 2. +	50%	70%	+ 20%
E	1. A 2. L	1. H 2. A	1. + 2. +	50%	70%	+ 20%
F	1. H 2. H	1. H 2. H	1. Same 2. Same	40%	60%	+ 20%
G	1. H 1. H	1. H 2. H	1. Same 2. Same	40%	70%	+ 30%
Average Totals				49%	70%	+21%

Objective Two Key: H= High
A= Average
L= Low

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