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ABSTRACT

Elementary teachers collaborated on a research project that investigated how a constructivist approach to gifted and talented integrated curriculum strategies and techniques could be developed and implemented. The collaborative group action research cycle involved planning, collecting baseline data, intervening strategies/modifying interventions, repeating baseline data, and returning to the planning phase for future cycles. After determining the project focus, participants collected baseline data, then students formulated research questions, which involved contrasting the Mayan and Egyptian civilizations. Student research was conducted individually, but compiled collaboratively. Students searched for information in books, journals, and on the Internet. They compiled their findings in small groups. This same method was used to explore ancient Greek culture. Students examined ancient and modern myths, wrote their own myth, and developed strategy games based on the myths. Critical readings were added to the integrated curriculum to help students develop a dialogue with the teachers and be in charge of constructing new concepts. Data collected at the beginning and end of the project indicated a substantial increase in use of the constructivist approach in integrated curriculum planning. Findings from the study also indicated the incorporation of constructivist methodology in daily practice also increased. (Contains 15 references.) (SM)

Collaborative Group Action Research: A Constructivist Approach to Developing an Integrated Curriculum

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Paper presented at the Annual Conference of the American Educational Research Association, New Orleans, April, 2002

Running Head: DEVELOPING AN INTEGRATED CURRICULUM

Collaborative Group Action Research: Developing an Integrated Curriculum

I (Penny) have conducted collaborative group action research in my classroom on an annual basis since 1993 as an attempt to increase my level of proficiency professionally in thinking and in practice. I have chosen research question(s) each year either to improve a problem area that I have recognized about myself, or to resolve a question in a particular area of interest. I use the term collaborative since I include input from the university level in direct collaboration and through conference interactions and discussions (Saurino, Saurino, & Politzer, 2001; Saurino, 1998; Saurino & Saurino, 1996; Elliott, 1990; Noffke & Zeichner, 1987; Carr and Kemmis, 1983). The insight I have gained by answering questions related to my practice has been invaluable to me, but questioning my practice alone has not been sufficient. For collaborative group action research to have its greatest impact, I have found that I must first examine my practice, before I can improve the affect of my practice on my students. The essence of true professional growth takes place when I reflect on my internal self with the focus on my beliefs, and critically challenge those areas of my practice that are in the greatest need of change. Critical reflection and self-reflection is at the basis of my research (Saurino & Associates, 2000). By looking at my practice and myself honestly, then researching possible change, I am able to allow real change to take place.

Collaboration with other educators is a critical component to our research. The collaborative groups we have been involved with meet regularly to engage in dialogue related to our topics of interest. At times we have a common question, and at other times, our topics differ greatly. However we differ or complement each other, the critical issue is that our dialogue should result in thoughtful inquiry that has the potential of leading us

toward reflective and transformative thinking processes that help us grow as professionals.

There are many different types of collaborative action research. The method that we used in this study has some common characteristics to the various forms that have been practiced by others. Our research is qualitative in nature. For this project, we were concerned with gaining new insights about ourselves as constructivist educators. We examined our beliefs, assumptions, and practices regarding learning and knowledge by investigating and applying new understandings of the constructivist pedagogy along with improving our creation of integrated curriculum for the gifted classroom. Journal reflections and discussions within the collaborative group in these areas were documented to better define what was learned during the research process so that we could further analyze the implications. Collaborative action research for us is an ongoing, recursive sequence (Saurino, Saurino, & Politzer, 2001; Saurino, 1998). As one cycle ends, another cycle begins building on the insights gleaned from the first cycle. Meetings with various members of the group were scheduled regularly throughout the study, and an informal atmosphere was maintained. The group meetings provided a place where plans were made, questions were asked and answered, problems were discussed, and reflections were expressed. The group setting also provided an avenue to brainstorm for new ideas, strategies, and techniques used to initiate actions, direct the research, solve problems, and ultimately answer the research question.

The research process completed by our study involved four chronological phases and a planning phase for future cycles. The four chronological phases were based on the

recursive collaborative group action research cycle outlined below and illustrated in Figure 1:

Phase 1: August	Planning phase of the project and Cycle 1
Phase 2: September	Baseline data collection for Cycle 1
Phase 3: Sept-Nov	Intervention strategies/Modification of interventions
Phase 4: December	Repeat baseline data/Reflection for Cycle 1
Phase 5: January	Return to Planning phase for future cycles

Phase 1 through 4 comprise the first research sequence of "Cycle 1" and Phase 5, and any

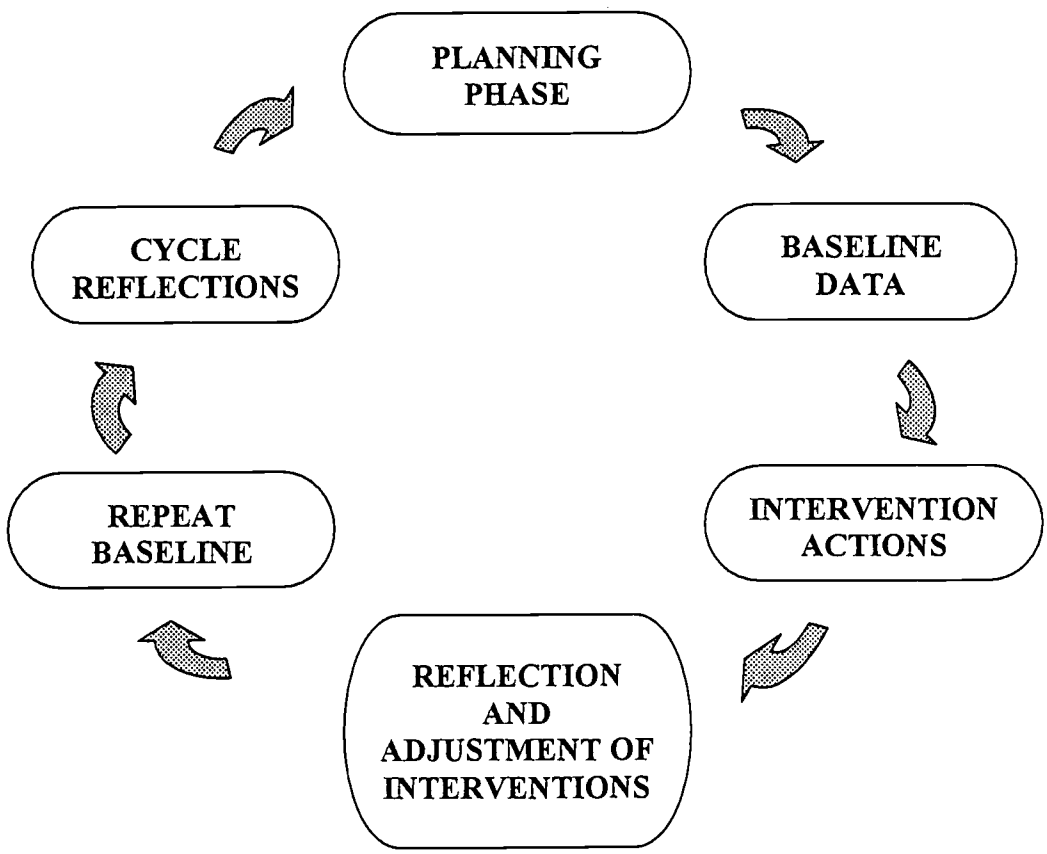

Figure 1: Illustration of one "cycle" of collaborative group action research.

following phases, might repeat the cycle to gain more information. After the first cycle, research questions could be modified or replaced, based on what was learned to date. A complete cycle was conducted during our study.

Planning Phase

The planning phase began in August 2000 when our group met for the first time to plan our research for the following year. The group of teachers in the gifted program and I had already established that "Structures" would be the theme for our integrated curriculum. We taught the same theme two years prior, so I already had on file interventions that I wanted to include for my research and those that I did not. Our Structures integrated curriculum included the following generalizations for the year:

1.) Structure is a meaningful framework of elements.

2.) Structure meets the needs of the designer.

3.) Structure provides a framework.

4.) Structure can be modified.

5.) Structure must obey the laws of nature.

My team teacher and I had already decided that she would focus on the mathematics, science, and design technology areas of our program, and my emphasis would be on the humanities and arts. Through these disciplines, we would apply and examine the generalizations for structure.

As a research group consisting of teachers and a university researcher (Dan), we were interested in critically examining how well our teaching methods paralleled the constructivist approach, and how we might increase our use of the constructivist approach. We also wanted to review literature related to the gifted genre to validate

instructional interventions utilizing the approach. The planning phase ended when our research question was on paper. Our Question for this project was:

How can we develop and implement a constructivist approach to gifted and talented integrated curriculum strategies and techniques?

Baseline Data

The study was conducted in an elementary school located in a prosperous, rapidly growing, upper middle class neighborhood in a mid-Atlantic state. The gifted and talented (G/T) students in this study participated in a pull out program and were bussed to a G/T center once per week. Actual class time with the students was approximately three hours and twenty minutes (not including lunch and recess), but time varied according to bus and school schedules. The center that I participated in included myself and one other teacher. The students were instructed by both of us at separate times during the day. The name of the program for gifted students was FUTURA (Furthering Understanding Through the Use of a Research Atmosphere).

Our baseline data began with the very foundation of our FUTURA program. Our supervisor discussed the constructivist approach with the teachers of the gifted and talented several times at our meetings, showed us a video in the fall of 1999, and guided us into developing an integrated curriculum manual for FUTURA that had constructivist pedagogy theory within the philosophy, process, and program goals.

Our interest in the constructivist approach further developed as we read literature on the subject and recognized our style of teaching within the pedagogy. The constructivist approach encourages student autonomy while the teacher consistently inquires about student understandings of concepts before and after sharing new

knowledge. The teacher should also look for and take advantage of those teachable moments while student responses drive the lesson. Thoughtful, open-ended questions along with plenty of "wait time" encourage diverse modes of inquiry in student thought (Brooks and Brooks, 1998). Throughout the research project we continued to inquire about the constructivist approach and closely examined how well we followed the model. In addition, we compared how well the constructivist pedagogy followed recommended instructional practices for gifted students.

During the baseline-data phase of the project, I was still examining my practice through the lens of the humanities and arts. My focus changed as I reviewed literature available on literacy and the post-modernist perspective. I also reviewed plans that I had implemented with my students two years prior. I had to decide which ones to keep because of their appropriateness for the students and for the project. The decision was made to offer students more choice (Parker, 1989; Maker, 1982; and Clark, 1988) by providing them with several choices in the form of learning centers. As an additional choice, I provided the opportunity for students to participate in a research project. I believe research is an important component in G/T instruction, and I investigated methods for my students to conduct research that would be most appropriate for a once per week program, and yet provide with a creative outlet.

Intervention Actions

The Golden Nugget

The next "action" in the project was a two-period assignment that included one lesson in which students formulated their research questions and one lesson in which they compiled their research as a group. During the first class we decided to compare and

contrast the Mayan and Egyptian civilizations. The topic was chosen because my students were discovering how the Egyptians might have built the structure of the pyramids, and were also studying the Mayan pyramids in their social studies classes. My students were curious about the pyramid structures from these two diverse civilizations. We decided to conduct research to look into the similarities and differences of these cultures. We then formulated two questions for our research:

1.) How are the Mayan and Egyptian Civilizations alike and different?

2.) How can we present our findings to the class?

"Research is formalized curiosity: It is poking and prying with a purpose. It is seeking that he who wishes may know the cosmic secrets of the world and they that dwell therein." (Hurston, 1942). This quote by Zora Neale Hurston sums up my goals for this research project. My students were curiously enthusiastic about these two cultures. I wanted to keep this curiosity alive by giving them a chance to research an area on this topic that was interesting to them, but I didn't want the project to get bogged down in particular research methodology. Their innate curiosity and creativity became a primary concern of our investigative process.

Students also formulated three questions that they chose to utilize when exploring either the Mayan or Egyptian civilizations:

1.) I am a ruler in the Mayan/ Egyptian Civilization. What is the purpose of pyramids in my civilization, and how do I feel about the people I rule over?

2.) I am a child in the Mayan/ Egyptian Civilization. What is my lifestyle and why are the pyramids important to me?

3.) What was the function of the pyramids in the ancient Egyptian/ Mayan

civilizations?

In order to develop a meaningful research project that would not take weeks to complete (we are a once a week pull out program), and in an attempt to work together as a group of learners with common goals, our research was conducted individually, but compiled as a group, another advantage of the group format. The students searched for information to answer their questions by investigating books and journals from the library, and by exploring information from the internet. As students discovered "golden nuggets" of research that they thought were important, they would write the information on large chart papers located around the room. Each chart paper had one of the research questions as the heading. Students were encouraged not to repeat any information.

When the students returned the following week, they were able to go to the chart paper with their research question and find many golden nuggets of research to answer their questions, as different groups of G/T students would add to the charts each day. Students were sub-divided into groups of three or four to decide how they would compile their findings. Each group had at least one person who studied the Egyptian civilization and one who studied the Mayans. Their task was to put together a presentation that would demonstrate their findings. We gave them one and a half hours to complete the task. We also provided them with a variety of materials that they could use in their presentation, such as the usual classroom art supplies, poster-board, transparencies, cloth, etc. Presentations were video taped, as we have found that students put forth their best effort when they are remembered on celluloid.

Throughout the project, we made field notes in our journals about student conversations, and intervened students about they preferences, especially when integrated

curriculum planning became bogged down by personal agendas. In the following example, Seth (all names other than the authors are pseudonyms) was more involved in his desire to be the pharaoh, then in compiling the research into a presentation that could be completed in the time allotted.

Randy: I'll record ideas for our plan.

Becky: What do you think about a skit? That would be fun.

Seth: I could be the pharaoh. Look at me.

Randy: Will we have time for a skit?

Seth: Help me wrap this cloth around me. I need a mask.

This type of situation often gave me an opportunity to teach skills needed for effective group decision making and planning, and to implement the constructivist approach.

The final results of comparing and contrasting the Mayan and Egyptian civilizations were very exciting. Each group differed in their presentation style, and the creative talents of individuals added to the group effort. We had the opportunity to listen in on their conversations, and were careful to watch for faulty constructs that may have been present. We used questioning techniques, and examples from our lessons or journals to correct misconceptions.

The Structure of a Myth

Another example of our interventive actions utilizing the constructivist approach was an investigation of the ancient Greek culture. We utilized the mythical writing style of Homer in contrast to other mythical authors. Our goals for the intervention were for our students to discover a common structure among ancient and modern myths, and to give them the opportunity to write their own myth. We began the unit with group

discussions about the culture of the ancient Greeks. We listened for what background knowledge they brought to the discussion, and built upon their knowledge. We compiled a list of characteristics common to the culture, which included power (to rule the known world), beauty (the golden ratio in the Parthenon and other Greek architecture), and knowledge (Athena, the Goddess of Wisdom was one of their most important gods, and Athens was named after her).

Following our discussion, we read, as a class, play versions of "The Odyssey," and "Cupid and Psyche," comparing these with the movie, "Star Wars" and other modern myths in literature. We guided them as they discovered ten steps in a myth. We documented the ten steps, the ten-step form became the structure for their own creation of a myth, and they proceeded to either work individually or with a partner to form a myth around these steps. It was quite helpful to the students to have the structure of the form format as they had difficulty implementing the ten steps the first time through.

Individual talents were demonstrated in their writing. My students were taught writing basics in the regular classroom. Therefore, my task was to expand their writing abilities by working with them individually. The writing of their myths took several weeks. Once the Myths were completed, students developed strategy games based on their myths. These games required that the students develop boards that allowed the players to move freely across the board with no beginning or end. The students also needed to develop game cards that determined the movement of the players. Again, the students determined the structure we would use for these games by looking for a common structure among name-brand strategy games that were present in the room for them to explore.

Reflection and Adjustment of Interventions

While we were in the midst of the "Structure of the myth" unit, I became aware of several great articles and books on mythical literacy, and my interest in mythical literacy increased dramatically as a result. As we began our reflections about the intervention process, I decided to add a new strategy to my interventions that was to include critical reading in the integrated curriculum. The addition began with several articles I read on the post-modernist perspective. As I studied current literature on the subject (Gee, Hull, and Lankshear, 2000), I began to analyze my instructional, motivational, cognitive, and social strategies surrounding our constructivist approach. One of my journal entries exemplifies the process:

> Do I see myself as a post-modernist, and if so, how does this affect my teaching? My thought processes are sifting through these concepts much as a miner pans for those golden nuggets that add riches to his pockets, even though my golden nuggets are reconstructed thoughts. I find that I sort though descriptions of the post modernist perspective sorting and resorting concepts of truth. If the modernist was seeking to define truth, then the post modernist questions how others view truth, and since others may view truth differently from ourselves, it is necessary to critically question truth as it is written regardless of what type of document is being read.

Along with my new knowledge of post-modernist perspective, I also considered a comment from a parent of one of my students at a recent parent meeting, "I think it's important for people to learn to think critically; to look at concepts from many different perspectives." My desire was to develop a lesson that would be a stepping-stone for

addition lessons where the ultimate goal was for the student to literally question author's viewpoints with any book they read. I wanted my students to begin to see the authors as real people with their own version of truth. By teaching students how to develop a dialogue with the author as if to question his or her motives, the student would be in charge of constructing new concepts, a major goal of my constructivist approach.

After weeks of searching for the first reading, I decided to conduct the lesson as a read-aloud with the book *The Sweetest Fig* (Allsburg, 1993). I began the lesson by asking all students who considered themselves to be writers to stand up. I then asked them to remain standing if they loved mint chocolate chip ice-cream ... stand up again if you love asparagus, etc. As our "writers" expressed their likes and dislikes, we discussed how all writers have different backgrounds and ideas. I questioned the students as to how these facts would effect what authors write about. A sample discussion follows:

Allan: People write about stuff that is important to them. I like to think about what I see on CNN, come of my friends don't.

Maddie: Why are you talking about TV?

Allan: TV is like books. The people who write the shows try to change the way we think.

Teacher: Have you read a book lately where you see within the writing that an author's perspective may be different from your own?

Catherine: Harry Potter. Some people think that because I read it I'll want to become a witch. I don't want to be a witch, but I do think that Harry Potter has a lot of fun. My mom and I talk about what authors are trying to say in their books all the time.

I gave the students some background about the author Chris Van Allsburg (1993),

and asked them to write three interview questions that they would like to ask him if he was present in the room. Before reading Allsburg, I also displayed three questions that I wanted them to consider while reading the book:

1.) What is important to the author?

2.) Do I agree with the author's perspective?

3.) How does the author try to convince me to agree with his perspective?

After reading the book, another discussion continued:

Maddie: Chris Van Allsburg likes dogs a lot.

Teacher: Why do you think he included the dog in this story.

Clay: He has dogs in a lot of his books. Marcel was treated meanly. Like how that guy treated the old woman. I think he was mean to everyone.

Allan: Yea, but he got his in the end.

Maddie: Treat others the way you want to be treated. That's what the author wanted us to learn.

Finally, I told the students to write three more questions that they would like to ask the author. Students then chose a partner. One partner played the role of Chris Van Allsburg, and read a short biography about himself, and the other student interviewed him. Students were instructed to answer questions based on what they learned about the author from the biography and from the interview. In this manner, students were encouraged to construct new knowledge, yet maintain some autonomy which were basic tenants of our constructivist approach.

Repeat Baseline Data and Cycle Reflection

At the end of the project, we repeated the baseline data we collected at the beginning of the project. Much of the data indicated a substantial increase in the use of the constructivist approach in our integrated curriculum planning, and we were pleased that our methodology and created integrated curriculum was compatible with the constructivist theory in the literature we reviewed during the project. The data also indicated that our incorporation of constructivist methodology in our daily practice had increased, which was one of our overall goals. In addition, my practice now incorporated the use of critical reading as a result of my ongoing reading of literacy research. We learned from the process that continued updating of our knowledge, from current research in our field of interest, is an excellent motivating factor in our professional development process. As a result, we highly recommend continued research in the area of practical application of constructivist techniques in the G/T and other classroom settings.

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