

SECOND GRADE STUDENTS' PERCEPTIONS
OF A CONSTRUCTIVIST CLASSROOM

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CHAPTER I

INTRODUCTION

School effectiveness has been evaluated in several ways including the use of standardized tests. Teachers may evaluate effectiveness through reflection. Teachers often attempt to improve the quality of their classroom by reflecting on their own performance. Many teachers keep journals with a record of what “works” and what does not. This is very important and a characteristic of a quality teacher because it is a specific way to improve the quality of the educational environment. One aspect of educational evaluation that seems to be lacking is that of the student’s perspective. This study used an interview format with students in a second grade constructivist classroom in order to gain an insight into how children view the classroom environment.

This study is based on constructivist theory which focuses on the meaning students make of their educational experience. Constructivism is a theory of cognitive development, developed by Jean Piaget, in which students construct their own knowledge as opposed to teachers transmitting knowledge to students. Children in a constructivist classroom are free to explore their own interests and the teacher serves as a facilitator. Students’ perspectives should be helpful to educators in the process of school reform. Students are the major players in the educational process but have been all but ignored. The student voice is lacking in the educational reform literature. Educators who are only

familiar with the transmission model of teaching, where students are seen as empty vessels that need knowledge poured in, find it difficult to make the paradigm shift to constructivism. They find relinquishing the decision making power frightening and predict mass chaos as a result.

Constructivism is not a teaching method so there is no recipe or formula to be copied. It is a theory of how children learn. Constructivist teachers will describe their classrooms as full of students excited about learning, empathetic toward peers, and responsible for their own behavior.

In teacher education courses, discussion of the application of Piaget's theory is often limited to the early developmental levels where the majority of application and research has occurred. Most often Piaget's theory is treated as a way to test children to find out at what stage of development they are functioning. This was not Piaget's intent. Piaget's theory of constructivism simply describes how knowledge is actively constructed. Piaget expected teachers to recognize and respect their students' abilities, not try to diagnose and treat them.

The purpose of this study is to gather information and report on students' perceptions of a constructivist classroom. Those who are already interested in constructivist theory and its application to educational practice may gain a deeper understanding from a description from the students' points of view. Those who are not knowledgeable about constructivism may benefit from learning about a different way of perceiving school.

Rheta DeVries' School Life Interview from her study on enacted interpersonal understanding (1991) was used to guide a dialogue in which students described various

aspects of their classroom experience. Because every individual perceives the world differently, it was expected that a variety of descriptions will emerge, even within a single classroom. The hope was that by listening to the students' descriptions of their classroom environment, teachers and other adults would gain a better understanding of children's understanding of schooling.

Definition of Terms

Hermeneutic Phenomenology

This form of human science research is an attempt to reach an understanding of some aspect of life. Unlike physical science research, in which an attempt is made to control and manipulate variables, the researcher questions, observes and sometimes participates in the situation being studied. This type of research is interpretive and qualitative in nature. van Manen (1990) says that "phenomenology describes how one orients to lived experience, hermeneutics describes how one interprets the 'texts' of life." (p. 4) The aim is to develop a deeper understanding of an experience or lived meaning. Conducting this type of research is a way of adding "to one's thoughtfulness and one's ability to act towards others . . . with tact or tactfulness." (1990, p. 7) The purpose of such research is to thoughtfully describe a lived experience or phenomena. The goal is to add to or enhance pedagogical awareness of the "other."

Writing is an essential part of this research method. van Manen (1990) describes the importance ". . . writing on the meanings and significances of phenomena of daily life is fundamental to pedagogic research." (p. 4) In this study an open-ended interview format was used to obtain descriptions of classroom life from students. These

descriptions were used to ascertain essential and incidental themes of various aspects of the classroom.

Theme

The use of themes in human science research is a method of coming to a better understanding of life experiences. The search for theme is a search for the essence of what is being said. Themes may lack rich descriptions which are found within the texts but they allow those interested to get at the heart of what is being discussed. By searching for themes within a situation or conversation we are searching for understanding. van Manen (1990) describes themes as the “knots in the webs of our experiences, around which certain lived experiences are spun and thus lived through as meaningful wholes.” (p. 90) In this study the search for themes was a search for what it is like to be in a constructivist classroom. The themes represent the meaning of the experience as interpreted by the participants.

Autonomy

Piaget describes autonomy as being the ability to govern oneself. That means to be able to make decisions independently, without rewards or punishments. The opposite of autonomy is heteronomy. Heteronomy can be described as being governed from the outside. A heteronomous person believes and follows those in authority without questioning for himself.

The development of autonomy is central to constructivist classrooms. In the classroom, teachers nurture the development of autonomy by allowing students to be

decision-makers. In fact, according to Piaget, children learn by acting on their environment. They construct meaning by testing their ideas. In order to achieve this type of environment students' ideas must be accepted and respected. For a constructivist teacher, even mistakes are regarded as valuable to the process of learning because they are evidence that a child is thinking and hypothesizing about how the world works.

“Autonomy is the ability to think for oneself and to decide between right and wrong in the moral realm, and between truth and untruth in the intellectual realm” (Kamii, 1994, p. 59) In a constructivist classroom the teacher and child must be autonomous. Children must be autonomous in order to develop cognitively and morally. The teacher must be autonomous in order to accept new ideas as they come. Allowing students to be decision-makers means sometimes accepting ideas that don't follow the norm. The teacher respects the child's ideas and encourages him to respect other's ideas. (DeVries, 1994).

Constructivism

Constructivism refers to the theory of cognitive development, developed by Jean Piaget. Basically, this theory states that children actively construct knowledge from within through interaction with the environment.

Piaget describes three kinds of knowledge: physical, logical-mathematical and social arbitrary. Physical knowledge is attained by acting on objects and observing the reactions which result. Logical-mathematical knowledge comes from an individual's perceptions of relationships between objects. Social arbitrary knowledge consists of the

labels, constructs or schemes which are developed as a result on interpersonal relationships.

Piaget (1965) looked at development as construction of knowledge in the cognitive as well as moral domain. Constructivist teachers try to encourage a sense of community in their classrooms. Children are encouraged to become autonomous, independent things. In order to develop it is important for children to recognize that there are logical consequences to their behaviors. The goal is for children to become self-regulators and not dependent upon adult supervision. The teacher will allow students to make mistakes in order that they learn from them. In these classrooms interpersonal relationships are considered to be central to all learning. A constructivist teacher believes children learn best when they are able to communicate their own ideas. Therefore, the teacher views his/her role as a facilitator as opposed to an instructor.

Significance of the Study

This study will add to already existing information about constructivism. In particular it will be valuable to second grade teachers who are interested in creating classrooms which enable children to become active seekers of knowledge.

Limitations

All the participants in this study were second graders in a suburban public school system. All participants came from the same classroom. The socio-economic status of this community would most closely be described as middle class. All these factors significantly limit the generalizability of the results. However, the design of the study as a

method of determining students' perceptions should add to the knowledge base of constructivism.

Organization of the Study

In Chapter II a review of literature related to constructivism as well as students' perceptions of classroom environment will be given. In Chapter III the methodology of this study will be described including the selection of participants and the instrument. This chapter will end with a description of the research design and will give a brief description of how the data will be analyzed. In Chapter IV results of the interviews will be discussed. The themes which emerged from these discussions will be analyzed. In Chapter V conclusions from the study will be drawn and recommendations for further research will be given.

Research Question

How do students perceive a constructivist classroom environment?

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

In this chapter a review of relevant literature will be discussed. Particular attention will be given to literature related to constructivism.

Review

Constructivism is a theory of cognitive development, developed by Jean Piaget. Piaget began his studies at an early age. When he was 10 he published his first paper on adaptive behaviors in mollusks. Later on he worked at the Binet Laboratory constructing intelligence tests. This is when he became interested in the way children think. (Crain, 1980) Eventually he moved into the field of psychology and became interested in the mental development of children. (Wadsworth, 1979)

Piaget believed all forms of knowledge fell into 3 categories: physical, logical-mathematical, or social-arbitrary. In order to describe how knowledge is developed Piaget referred to 4 constructs. He used the term schema to describe mental structures used to organize information. Assimilation and accommodation are mental processes humans go through in order to fit new ideas and experiences into these schema. He described

equilibrium as the sense of balance that comes when assimilation and accommodation are in balance. (Wadsworth, 1979)

The idea of constraint versus individual motivation is a definite theme in Piaget's work. In Piagetian theory knowledge is constructed by the child and cannot be forced upon him from the outside. Autonomy of individuals is necessary for construction of knowledge, whether it be intellectual or moral in nature. (Piaget, 1965)

Many Americans have studied in Geneva with Piaget and follow in his footsteps. Eleanor Duckworth (1987) took Piaget's notions and proposed that children need to be allowed to have their own wonderful ideas. She maintained that asking the right question at the right time moves children forward in their level of thinking. Allowing children to ask the questions insures that the appropriate ones will be addressed. Duckworth described the role of the adult as facilitating an appropriate environment.

In her studies of an elementary science program in Africa, Duckworth found that students enrolled in a constructivist program did significantly better in problem solving and creating new ideas than children who did not participate in such programs. Placed in a room with materials to explore, constructivist students were disappointed when they were stopped after 40 minutes. They had become so engaged with new ideas they were anxious to continue. Meanwhile, non-constructivist students ran out of ideas after 30-35 minutes and were doing nothing. (Duckworth, 1987)

Constance Kamii is another educator who studied under Piaget. Kamii is particularly interested in the construction of logical-mathematical knowledge. She has written extensively on how students "reinvent" arithmetic. (Kamii, 1982)

Kamii has stated that adult control or constraint “stifles children’s construction of their own values and ideas.” (Kamii, 1981, p. 13) She states that autonomy is the first objective of a constructivist classroom. Without the opportunity and ability to question their surroundings, students cannot construct knowledge. Kamii describes moral and intellectual autonomy as being interdependent. Questioning the validity of an irrational rule is just as important as questioning an erroneous statement that is presented as a fact. (Kamii and DeVries, 1993)

Rheta DeVries (1994) investigated the sociomoral atmosphere of constructivist classrooms. She believes students not only construct their knowledge of math and science but also rules and morality. She describes a moral classroom as one with a positive sociomoral atmosphere. Positive interpersonal relationships and a sense of community are the foundation which facilitates students to become risk-takers. “The sociomoral atmosphere colors every aspect of a child’s development.” (DeVries, 1994, p. 43)

The School Life Interview used in this study comes from Rheta DeVries’ research (1991) on children’s enacted interpersonal understandings. This research compared direct-instruction, eclectic and constructivist kindergarten classrooms. Selman’s developmental levels of interpersonal understanding were used to code observations of student interactions. All experiences were coded on 4 levels ranging from a 0 which is designated as impulsive to a level 3 which is designated as mutual understanding. Negotiation Strategies were described as experiences in which there was disequilibrium or tension between the participants. Shared Experiences were described as experiences in which equilibrium or the absence of tension was present. Students in three classrooms were observed during a board-game and a sticker-division situation. Interactions and

observations were coded according to Selman's levels. Children's perceptions of their classroom were obtained through a School Life Interview.

In both Negotiating Strategies and Shared Experiences, the direct-instruction group had a higher percentage of students demonstrating Level 0 strategies and the constructivist group had a higher percentage of Level 2 strategies. Observations of the classrooms when the teacher was absent revealed that the constructivist classrooms were able to continue working independently while the other classrooms became chaotic. Responses from the School Life Interview indicated that students in the constructivist group felt ownership of rules.

Research indicates that the environment of a classroom can have important effects on students. Classes characterized by high levels of competitiveness and teacher control are found to have high rates of absenteeism. (Moos, 1979) "Since there can be only one 'winner' in a competitive goal structure, the vast majority of students will experience failure." (Johnson and Johnson, 1974, p. 224) Being a part of a highly structured environment may cause students to become dependent on constant guidance as opposed to developing a feeling of independence. (Moos, 1979)

Constructivist teachers strive to create a classroom environment best described as a community. As the teacher withdraws from the control position, there is room for more student interaction with each other. Cooperative skills become important as children begin to assume the role of teacher as well as student.

CHAPTER III

METHODOLOGY

Introduction

In this chapter a description of the methodology of this study will be given. The selection of participants and test instrument will be explained as well as the design and analysis of data.

Theory of Methodology

For some time educational research has tried to validate itself by using scientific methods synonymous with the “hard” sciences. Within this type of evaluation the researcher tries to “control” all variables except the one being studied in order to discover some “truth.” These kinds of studies always encounter some problems. First is the fact that human reactions and thoughts cannot be controlled from the outside. If the investigator was capable of controlling them then he/she has already had an effect on whatever it is he/she was studying. Secondly, “truth” when used to discuss human perceptions is tenuous at the very least. Perceptions of a situation or topic will vary between every participant’s values, beliefs and past experiences.

Treating human science the same as physical science ignores the importance of human thought and interrelationships. Phenomenological hermeneutics does not attempt

to look for truths, rather it tries to describe reality as it is perceived by the participants. Within a shared experience, common themes or similar descriptions may be found. However, it is inappropriate for an evaluator to point at the shared theme and state that as the truth. The theme represents the meaning of the experience as interpreted by the individual.

Participants

A second grade constructivist classroom was selected on the basis of a referral by an educator considered knowledgeable of constructivist theory. Formal entry was attained from the building principal and the classroom teacher. All participants in this study were students in this classroom who had agreed and whose parents had given consent for participation. In a classroom of 19 second graders permission for participation was received for 14 students. One child dropped out during the study. Six of the participants were female and seven were male. One of the students in the study came from African-American culture, one came from Native American culture and one student was of Hispanic descent and spoke English as a second language. The socio-economic status of this community would most closely be described as middle class.

The teacher in this classroom was interviewed as well as a means of describing her understanding constructivism.

Instrument

The School Life Interview (see Appendix A) designed by Rheta DeVries (1991) was used as a guide to engage students individually in a discussion of their perceptions of

a constructivist classroom. The discussion was recorded and transcribed at a later date.

The decision to use an interview format in order to learn about students' perceptions of classroom environment was made because this method is most appropriate to the theory of constructivism.

Procedure

In order to build a rapport with the students, classroom visitations were scheduled prior to conducting interviews. After visiting the classroom a minimum of two times, the students who had given consent and whose parents had given consent to participate in the study were interviewed in an alternate room in the school building (library, cafeteria, etc.) Consent was obtained from both parents and students through an informed consent form (see Appendix C). Interviews lasted from 30-60 minutes depending on the length of responses from the participants. Two interviews were conducted with each participant. One visit was scheduled in November and one in January. The School Life Interview was used as an outline to guide the discussion. Students were encouraged to expand on their answers. These discussions were audio taped and transcribed to facilitate analysis.

The teacher of the classroom was asked to describe how her teaching had evolved from her first year of teaching. During the discussion she described how she had changed over the years, and her goals for her children in the future.

Analysis of Data

Interviews were tape recorded in order to obtain accurate records of the students' responses. The responses were transcribed to facilitate comparisons between different students. All records remain confidential and were only used to report the findings. Upon final approval of the thesis, all tapes and transcriptions will be destroyed.

Students' responses to the interview were presented descriptively. An attempt was made to isolate themes which emerged from the students' descriptions. van Manen (1990) describes three ways of analyzing themes: the wholistic or sententious approach, the selective or highlighting approach and the detailed or line-by-line approach. In this study the wholistic approach was used to gain an understanding of the essence of what the participant is saying. The students' descriptions of different aspects of their classroom were looked at in their entirety. A single phrase which most fully captures the meaning of the descriptions was reported. When common themes arose they were noted. By analyzing every student's response within the categories an overall view of this classroom's environment from the students' perspectives emerged.

CHAPTER IV

RESULTS OF THE STUDY

Introduction

In this chapter the results of the interviews will be presented. The teacher's description of the classroom and her teaching methods will be looked at first. Next, the students' descriptions of their classroom will be presented. The themes which emerged are discussed.

Teacher's Interview

The teacher in this classroom describes herself as being a constructivist teacher in transition. She explains that she didn't begin as a constructivist teacher. Intrinsicly she thinks she always believed in Piaget's theory of constructed learning but she didn't begin putting this theory into practice until her second year. Her first year as a teacher she describes as being very traditional.

"You know everyone else was doing basals and I was the new kid on the block. So I started to work with a basal and I went through the Saxon Math and I used whatever the teacher before me had been doing and that was a miserable year."

Very unsatisfied with traditional methods she began searching for new ways to help children learn. The summer after her second year of struggling with basals she was

invited to attend a seminar taught by Dr. Connie Kamii at the University of Alabama at Birmingham. Dr. Kamii has done extensive research on constructivism focusing mainly on children's construction of mathematical knowledge. Upon completion of this course she came away with a new way of looking at students' development of mathematical knowledge.

When she returned to school that year she began to completely phase out the basal and her students began the process of 'reinventing arithmetic.' She began research on harmful effects of algorithms but unfortunately wasn't able to complete it.

"Once a child had been taught the algorithm, they would do that because it was a quick and easy way. You didn't have to understand. And then they wouldn't do any thinking anymore."

As she encouraged her students to explain their thinking and provided a safe environment for exploring numbers her students began to construct their own way of knowing.

"They were making up algorithms when they were inventing but it was their own instead of the one that mom and dad was using. By the end of the year, my kids were all pretty much able to do double column addition with regrouping."

She confesses that in the area of math is where she has made most of the changes towards constructivist theory because that is where she has received the most training. However she believes strongly that children construct their own knowledge and plans to adapt her plans and behaviors to allow her students more autonomy in other areas. She describes her understanding of constructivist theory as:

"If a child has a problem and they solve that problem, they learn things in the process. And then they know those things, those things are theirs forever." . . . "it's a lot more fun. It's a lot more meaningful to the children to do it this way."

Students' Interviews

The "School Life Interview" (Appendix A) designed by Rheta DeVries (1991) was used as a guide to engage students individually in a discussion of their perceptions of a constructivist classroom. Because it was used only as a guide each discussion was unique. Some children were not asked every question on the "School Life Interview."

The students' responses are presented using the headings from the "School Life Interview." The heading "Classroom Activities" was changed to "Math Time" as a result of the decision to focus on math as the area in which this teacher applied constructivist theory. Under each heading responses to specific questions are looked at. The discussions about voting were omitted from the results because the students' responses were extremely difficult to decipher. The children attempted to describe a school wide mock presidential election that did not involve voting within the classroom.

Rules

In this school an effort to maintain positive and consistent guidance towards appropriate behavior was immediately noted. School wide assemblies were held every morning to manage announcement and attendance interruptions as well as to provide an opportunity for school wide discussion of appropriate behavior. Role plays were enacted by different classrooms and a model to deal with a variety of situations was portrayed (Stop, Think, Make a Good Choice). The school rules are on display throughout the building. This list is called the "Code of Conduct" (Be Respectful, Be Honest, Accept Responsibility, Practice Safety, Use Good Manners and Follow School Rules).

When students were asked to describe what kinds of rules their school and classroom had, a definite theme emerged. The vast majority of rules listed by students were concerned with controlling physically and verbally aggressive behavior. Only 5 out of the 13 children mentioned the Code of Conduct by name. However, 8 of the children mentioned a negative variety of part of it. For example, instead of remembering “Be Respectful” four of the children listed their rules as being “No spitting, Don’t fight, Don’t cuss.” While observing teachers, faculty and staff it was noted that a consistent effort was made not to list negative behaviors such as these but to reinforce positive choices. Children, however, find it much easier to think of “don’t” rules. (DeVries, 1994)

Six of the children specified that they only had one rule in their classroom and that was “Do what you’re supposed to do always.” This was described as being their teacher’s rule.

When the students were asked “Who gets to make the rules” the responses varied but one thing was apparent, adults were seen as having ownership over rules. Eleven out of the 13 children responded that adults (e.g. teachers, principals) get to make the rules. When they were asked if children ever get to make rules their answers became somewhat confusing. Five of the children stated bluntly that “no” children never get to make the rules. Two said that children get to make rules sometimes but that their class hadn’t done it yet and one said they made rules sometimes and listed some rules. One said that “yes” children get to make rules and she gave the example of “no fighting.” Two of the students described that children’s rules consisted of making good choices and three of them described that children make rules that they have to keep for themselves. It can be seen here that these children felt little ownership of rules. The majority believed that rules

come from the adults.

When questioned about the reason for having rules the children focused on two main reasons. The students described rules as being needed to keep people safe and to keep people from being bad. During the conversation some of the children mentioned multiple reasons for having rules.

Ten of the children described rules as being needed to keep people safe and to avoid being hurt. An example of this comes from one student's description:

“So people wouldn't get hurt or anything.”

Five of the children described rules as keeping people from being bad. These children seemed to perceive that without rules everyone would be bad. Two of these children explained why they think we need rules as:

“Cause if we didn't have rules we'll be fighting all the time.”

“Rules are good cause whenever a kid tells you to break glass and stuff on people's cars and you don't want to just tell them that you have to follow school rules.”

None of the children mentioned the reason for rules was the avoidance of punishment. But, when the children were asked to describe what happens when a rule is broken (e.g., shouting in class, fighting or stealing) a variety of consequences were mentioned. The children closely linked rules to punishments such as: sitting in time out, being sent to the office, calling parents.

Two children described rules as being needed to keep order in the classroom. A student described why she perceived rules as being necessary as:

“Sometimes they're fun. Like follow school rules cause if you make a big mess then we have to pick it up and that's not fun so fun is to keep it clean.”

Only one child responded that he didn't know why we have rules.

In reflecting on the statements children gave on rules it begins to become apparent that they perceive rules as being a driving force in their lives. These second graders view rules as coming from outside themselves and controlling their actions and causing benefits and consequences. Within the area of rules a variety of themes emerged. One theme which came from the children's descriptions was that "rules come from adults." Only a few of the children's responses could be represented by the theme "I can make rules for myself." The children all described a recognition for the importance of rules in their life. Two dominant themes emerged regarding the reason for rules: "We need rules to keep us safe," and "We need rules to keep people from being bad."

Interpersonal Interactions

The children were asked questions which pertained to interpersonal situations. They were asked to describe what happens when there is a conflict between children and they were asked to describe in what ways children help each other.

When asked the question "What do you think is the best thing to do when somebody grabs something you are using or hits you?" there were two predominant answers.

Seven of the students responded that the best thing to do was seek adult help to solve the situation. Only one child phrased it in such a way to sound like "tattling." When asked why this was the best solution to the problem the children described a faith in the ability of adults to resolve conflict. These quotes from four of the children are examples of some of the reasons for seeking adult help:

“Cause the teacher could put people in time-out.”

“Because she can help us to figure it out what we did wrong and tell them we’re sorry for doing that.”

“Cause Dr. L (principal) will tell him not to do it no more and he won’t.”

“Cause if you don’t (get teacher help) and you stay in a fight you never want to fight them in case they’re mean.”

Four of the children believed the best thing to do was to resolve the conflict themselves. They described negotiating with the wrong-doer and asking nicely. Two of these children described this as their first solution and if it didn’t work then they would seek adult help. A variety of reasons were given for why negotiating with the wrong-doer is the best thing to do. The children described reasons such as: not wanting to be rude, to avoid being punished for returning aggression, to avoid getting hurt and don’t know why.

“Because if you take it back you will be in trouble too.”

“. . . maybe they won’t give it to you if you scream at them and just tell on them, you can just do it by your own and tell them can I have it? Sometimes they didn’t listen to you and you need help.”

From their discussions it was apparent that all the students had been a part of or at least witnessed conflict situations in school. Some of the children described being in fights or having property stolen.

During the interview students were asked if they helped each other with their school work and when they got hurt. Two of the children stated that you can’t help each other with school work and two said you can only help each other with the teacher’s permission. A student described:

“If we get finished and if Mrs. T says you can help them we can. We can’t help people on the spelling test because that’s wrong.”

The rest of the students said they could help each other with work and mentioned things such as: sounding out words, solving math problems and checking for correct answers. One student described one way children in the room help each other:

“Like if they don’t know a problem then you can help them figure it out.”

When asked what children do when someone gets hurt nine of the children described seeking adult help. Once again these second graders displayed a perception that adults are problem solvers. When asked what children do to make the hurt person feel better the students described helping the person get cleaned up. Two examples of the ways students described helping hurt children:

“We just ask them if they’re all right and help them up.”

“You could take them to the office so they could get a bandage or something to put on their knee.”

The dominant theme which emerged from the children’s descriptions of interpersonal situations is that “Adults can solve problems for me.” The majority of the students expressed a faith and reliance on the adults around them to solve conflict and to help when someone was hurt.

Math Time

During the teacher interview it was discovered that the area she felt most confident in as a constructivist teacher was math. For this reason the children were asked several questions about their perceptions and opinions of math.

One of the activities that many children mentioned was P.A.T. This stands for “Preferred Activity Time” and is time set aside at the end of the day for children to choose from a variety of math games. All of the students described this as their play time and something they looked forward to every day. Games such as “Race for a Dollar and Make Ten” which help develop understanding of place value were mentioned often. Just a few of the students’ descriptions of P.A.T. and the math games they play are:

“Sometimes we do math writing and sometimes we do math playing.”

“When it’s real close to go home we play P.A.T. time.”

“It’s fun. We get to play games.”

“You have to roll and there’s pennies and dimes and if you get ten pennies you get to trade for ten cents worth and then if you get four quarters then you get to have a dollar and that’s when you win.”

The students were asked to discuss another math activity called combinations. In the morning the class is given a number and asked to find number sentence combinations that make that number. For example, if the number was 22 a combination would be $20+2$.

This topic generated a lot of interest from the children. Ten of the students wrote down examples of their combinations. While the diversity of abilities in this classroom is easily apparent (see Appendix D) none of the children displayed attitudes of being superior or inferior in their abilities. All of the students were willing to share their combinations and a few were able to describe their way of thinking.

Two children described that in the beginning they had a hard time. These children mostly shared what would be considered easy combinations like $92+0$ or $93-1$. One student shared the fact that she had difficulties at the beginning of school:

“Combinations is when we have to, like if it’s 21 we have to think something to make 21. The first time I didn’t get nothing.”

Many of the children shared more difficult combinations. Six of the children demonstrated the use of multiple tens (e.g. $10+10+10 . . .$) and three of them had developed this further using multiplication of tens (e.g. 9×10). Further examples of more difficult combinations some children shared are:

“That’s nine times ten plus 2 . . . because it’s like 9 tens plus 2.”

“Because you know 900 if you take away 800 that’d be 100. Then if you take away 7 for 93.”

“Sometimes I be doing it a different one like 50 (plus 50) take 10 plus 1 (makes) 91.”

Four of the students mentioned or described what their classmates were able to do but that they couldn't. For example, one girl was aware that her classmates were using multiple tens but she said that confused her and she just used "her own numbers." When asked about combinations using multiplication another student readily named her classmates who had shared those answers but admitted that she didn't understand their reasoning.

When disagreements occur over the correctness of an answer the students had several ways of solving the problem. Using cubes to physically manipulate groups of numbers was very popular and mentioned by several students. They described that by using cubes you could show the other person that your answer was correct. Using the number chart and your fingers were other ways that children could use to prove the correctness of their answer. It is interesting to note that only twice was the teacher mentioned as being used to decide if an answer was correct. The teacher was mentioned by a student in reference to a combination using multiplication and another student describing subtraction from large numbers (e.g., 900-807).

Taking into consideration the students' eagerness to share their combinations and their descriptions of math games a definite theme of "Math is fun" emerged. This is supported by the fact that eleven of the children stated that they liked math.

The theme that "it's OK to make a mistake in math" was apparent in students' discussions about disagreements with their classmates. The students never described incidents of becoming defensive or arguing about answers merely trying to come to agreement. From classroom observations during combinations time it was apparent that the children were used to acknowledging errors and this was perceived as simply a chance

to correct one's thinking. However, these children would not generally change their answer simply because another disagreed with them, they expected their classmates to sufficiently prove their reason for disagreement. Their methods of proving answers to classmates was previously discussed.

Similarly the theme "I can solve math problems" demonstrates the students' feelings of ownership of their mathematical knowledge. All of the children shared their combinations with the confidence that their answers were valid and valuable contributions to the discussion. Even the students who described classmates with more complicated answers merely stated this as an observation and by no means as reflecting negatively on themselves.

Reason for School

When students were asked about their opinions of school as a whole it was surprising how uniform their answers were. It is suspected this is one area where their desire to please the interviewer came through.

When asked "Why do we come to school?" every single student responded "to learn." Only one child expanded on this by saying "they make you go to school to be a good person."

When the students were asked "Do you like to come to school or not?" Ten out of the 13 responded with a definite yes. One student said "kind of," one said "sometimes" and only one child said "no" but he had responded yes the first time he was asked. Where the students diverged was on their reasons for liking school. Some of the reasons

mentioned were: it's fun, you get to play, learn how to read etc., gym, music, art, recess and to get away from a baby brother. Two examples of students' reasons are:

“Cause it helps you learn and helps to read so you won't be dumb when you grow up.”

“It'd be more better if you learned so you could like if you ever had children and they needed help you could help them with their math homework.”

The children were asked “If you could chose to go to school or go someplace else, what would you chose?” Once again an overwhelming majority stated they would chose to go to school. Only one child said he would chose to stay home to be able to spend time with his biological father. One student said it would depend on if it was a good day or a bad day.

Many reasons were given for choosing to go to school. Most of the children repeated the same answer from the question “why do you like school” The reasons ranged from it's important to learn to read and write etc., it's fun and to spend time with friends.

The overwhelmingly predominant theme that emerged from the discussion on school was that “School is a good place where you learn things you need to know.”

Summary

Many different themes emerged from the students' descriptions of their classroom. When discussing rules and social interactions adults as opposed to children were seen as having control. The children felt little ownership of rules. The majority believed that rules come from adults. The students described rules as being needed to keep people safe and to keep people from being bad. The children expressed a faith and reliance on the adults

around them to solve conflict and to help when someone was hurt. In the area of math children demonstrated feelings of ownership. The discussions revealed that they perceived themselves to be decision makers and problem solvers in math. When the interviews turned to discussions about school in general and the reasons for school these children expressed the feeling that school is a good place where you learn the things you need to know.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Introduction

In this chapter some conclusions which can be drawn from the results will be discussed. Recommendations for further research into students' perceptions and constructivist classrooms will be given.

Conclusions

The teacher in this classroom described herself as being in transition. She began her career using basals and following the traditional methods used by her peers. As a result of dissatisfaction with these methods she sought out alternatives. With a belief in Piaget's theory of constructivism she began to transform her approach to classroom practices. As is common when teachers attempt to make dramatic changes, her classroom is evolving in stages. The teacher's constructivist beliefs can be seen through her actions in glimpses during the day but they are very apparent during math time. The results of the student interviews are reflective of a classroom which contains traditional as well as constructivist activities.

The purpose of this study was to gain insight into how children perceive their classroom and school life. After meeting with the children and conducting two interviews some common themes emerged.

When the students were asked questions about rules they responded in ways which would not be expected from children who had experienced autonomy in this area. Children in constructivist classrooms express ownership of rules (DeVries, 1991). The students in this classroom perceived that rules come from teachers and other adults. The themes which emerged like “rules are written by adults” and “rules keep us from being bad” reflect the children’s perceptions that rules come from the outside not from themselves.

There may be many explanations for the responses that were received. First, of course it must be taken into consideration that this teacher is still in transition from a heteronomous, teacher-directed classroom towards one in which children are more autonomous. Secondly, these children had already experienced at least two years of traditional schooling and their answers could be reflective of their composite perceptions, not just of second grade.

Similarly, when the children were asked about situations involving conflict or when somebody needed help they mainly focused on turning to adults. They all perceived that children were willing to help each other and did help each other but that the first action would be to solicit adult help. The theme “Adults can solve problems for me” was predominant. Once again, these responses were not reflective of children who had experienced autonomy.

It is common for adults to feel the need to care for children by solving their problems. Intervening in conflict situations and rushing to aid a child in need are noble acts, however when children are never allowed to solve problems for themselves, they develop the self-perception of needing outside help. The selective use of authority and the atmosphere of student autonomy allows children to develop a sense of responsibility for themselves and for the well-being of their peers. (DeVries, 1991)

When discussing their perceptions of the classroom during math time the students expressed feelings of autonomy. The students displayed a sense of confidence in their abilities and a willingness to demonstrate their work. Ten of the children volunteered to write down combinations for selected numbers (see Appendix D). These written examples as well as the discussions with the remaining children revealed a vast difference in abilities. Using the constructivist approach during math time allows all students to participate regardless of their ability. Because the teacher encourages the sharing of thoughts and ideas during math time, the children were very aware of the capabilities of their peers. Due to the atmosphere of cooperation which the teacher fostered this knowledge did not result in feelings of superiority or inferiority. In fact the teacher expressed the belief that the children learned best from listening to each other's explanations and trying new methods that their friends had used. All of the children shared their combinations with the confidence that their answers were valid and valuable contributions to the discussion.

Because the children had constructed their own understanding of arithmetic, they would defend the correctness of their answers until proven wrong. The children described many methods which were used to solve disputes over answers. They explained that disagreements could be solved by using the number chart, cubes or tally marks. The

teacher was only mentioned twice as a way to check an answer's correctness. This process of children constructing their own understanding is fundamental to the development of mathematical knowledge. The traditional method of transmitting adult created algorithms is harmful to children's understanding of arithmetic. (Kamii, 1994)

All of the children expressed the feeling that math is fun. When asked if they ever got to play in their classroom many of the children mentioned math games as being their play time. Math games were not considered "work." Two children mentioned episodes of solving a math problem with a friend. This enjoyment of math time is witnessed in the students' desires to explore, discuss and solve problems in math.

It is reassuring that the children in this classroom perceived school to be a positive place. They explained that it is important to come to school to learn reading, writing, and math etc. Some of the children made a point to talk about their own personal growth since they began coming to school. Such positive beliefs are necessary if children are to continue to benefit from the educational experience.

Recommendations

Further research still needs to be done on the application of Piaget's theory of constructivism. While his theory has been discussed, studied and taught in teacher education programs for quite some time it is still rarely put to practice. The traditional, transmission model remains the dominant mode in public education. Before a large shift away from traditional and towards constructivist teaching will occur more examples of its positive effects need to be reported.

Future studies of constructivist practices should take into account children's previous experiences with traditional, direct-instruction classrooms. Making an effort to identify children who have participated exclusively in constructivist programs will more accurately portray the fundamental differences in their social and intellectual development from students who experience traditional programs.

Finally, studies which investigate how teachers undergo dynamic changes in philosophy and practice would also be of particular interest. What are the processes and resources that give teachers the support they need to explore new methods? What information do teachers need to accurately evaluate new ideas before they are applied to the classroom? These questions are paramount to an education system which attempts to seek out and support what is best for children.

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APPENDIXES

APPENDIX A

SCHOOL LIFE INTERVIEW

School Life Interview

DeVries, R., Reese-Learned, R., & Morgan P. (1991). Sociomoral development in direct-instruction, eclectic, and constructivist kindergartens: a study of children's enacted interpersonal understandings. *Early Childhood Research Quarterly*, 6, 473-517.

Rules

1. Do you have rules in your school? What rule do you have? If no: Are there some things you *have* to do? Are there some things you cannot do?
2. Who makes the rules in your class? Do children ever get to make rules? If yes: What rules have you made?
3. Do you know what it means to vote on something? Tell me what you do when you vote. Do you ever get to vote in your class? What do you vote about?
4. What happens when someone breaks a rule? What happens when someone _____ (violates rules mentioned by children?) What does your teacher do? What does your teacher say?
5. What happens when someone shouts or hollers in the room? What does your teacher do?
6. Is there a rule not to fight? Why is there a rule not to fight? What does your teacher do when someone fights?
7. Is there a rule not to steal in your class? What does it mean to steal? Why is there a rule not to steal? Does anybody ever steal something from somebody else in your classroom? What happens? What does your teacher do?

Interpersonal Interactions

8. Tell me, What do you think is the best thing to do when somebody grabs something you are using? What if you were using a pencil to write and someone just grabbed it out of your hand? What would be the best thing to do? Why is that the best thing to do?
9. What do you think is the best thing to do when somebody hits you? Why is that the best thing to do?
10. Does your teacher talk with children about what to do when they fight? What does she say?

Classroom Activities

11. Do you get to play in your classroom?
12. Are there things you do in your classroom that you like to do? What things do you like to do?
13. Does your teacher want you to have fun in the classroom?
14. Does she like you ---- like the children?
15. Can you help your friends in school with work? Does your teacher like you to help each other?

16. If somebody falls down and scraps his or her knees so they bleed, what do children in your class do? Do children try to help the hurt person feel better? What do they do?

Reason for School

17. Why do you come to school? Do you like to come to school or not? Why is that? If you could choose, would you come to school or go somewhere else?

APPENDIX B

RESEARCH PARTICIPATION LETTER

Dear Parents,

I am a graduate student at Oklahoma State University. During the fall I will be conducting my thesis research involving students' perceptions of the classroom environment.

The purpose of this research is to describe students' perceptions of the classroom environment. The specific areas of environment include rules, interpersonal interactions, and classroom activities. The findings will be helpful to teachers, and other professionals who work with children as well as to researchers to conduct further studies.

The purpose of this letter is to request permission from you to allow your child to participate in this study. Participation involves answering questions to an interview in which he/she will be asked to describe his/her perceptions of the classroom.

All responses to the interview will be kept strictly confidential. Any responses that are used in the study will be reported without reference to an individual child or use of a child's name. The individual responses from your child will not be shared with your child's teacher or any other school faculty.

Please indicate on the attached form whether you agree to have your child participate in this research. Results of the research project will be provided to parents of the children upon parental request. If you have any questions please feel free to call me (405) 762-0394, my major advisor Dr. Kathryn Castle (405) 744-7125 or the University Research Services, 001 Life Sciences East, Stillwater, OK 74078; (405) 744-5700.

Sincerely,

Valorie Lewis
13008 Hwy. 25
Franklinton, LA 70438

APPENDIX C
INFORMED CONSENT FORM

Consent Form

I, _____, hereby authorize Valorie Colleen Lewis,
Oklahoma State University Student, to include my child,
_____ in her research project.
(Name of Child)

I understand that the information gathered on my child will remain confidential and my child will not be personally identified in this study. I understand that the findings of this study will be reported for the group and not for the individual.

I understand that the purpose of this project is to collect information for an investigation entitled, "Second Grade Students' Perceptions of a Constructivist Classroom Environment." The purpose of this study is to describe students' perceptions of the classroom environment in order to better understand the meaning students make of schooling.

I understand that participation is voluntary. Children will be asked to participate and have the option to refuse. Children can withdraw from participation at any time. There is no penalty for refusal to participate.

Children will be interviewed for approximately 30-60 minutes in the school library. Interviews will be conducted at times that will not interfere with major classroom events or lessons. Some sample questions are:

*Are there things you do in your classroom that you like to do?
Can you help your friends in school with work?
What rules do you have in your classroom?*

I may contact Valorie Lewis for further information about this research project at (405) 762-0394. I may also contact Dr. Kathryn Castle, 235 Willard Hall, Oklahoma State University, Stillwater, Oklahoma 74078; (405) 744-7125, or the University Research Services, 001 Life Sciences East, Stillwater, Oklahoma 74078; (405) 744-5700.

I have read and fully understand the consent form. I sign it freely and voluntarily. I understand that I will be given a copy of this consent.

Signed: _____
(Participant's parent)

Date: _____

Child's name: _____

APPENDIX D
COMBINATIONS

89

$$8 \times 10 + 9$$

92 + 0

$$10 \times 10 + 10 + 20 + 20 + 10 + 2$$

91 + 1

100 + 7

92

$$93 - 1 \quad 91 + 1$$

$$94 - 2 \quad 95 - 3 \quad 96 - 4 \quad 97 - 5$$

$$10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 2$$

89

$$89 - 0 = 89$$

$$89 + 0 = 89$$

$$0 + 89 = 89$$

$$90 - 1 = 89$$

$$86 + 3 = 89$$

$$10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 9$$

92

$$\begin{array}{r}
 42 + 0 \quad 0 - 92 \\
 10 + 10 + 10 + 10 + 10 + 82 \\
 100 - 0 + 42 \\
 9 \times 10 - 2
 \end{array}$$

91

$$\begin{array}{r}
 10 + 10 + 10 + 10 + 10 \\
 + 10 + 10 + 10 + 10 + 1 = 91
 \end{array}$$

$$\begin{array}{r}
 60 + 30 + 1 \\
 9 \times 1
 \end{array}$$

$$\begin{array}{r}
 ~~50~~ 50 + 50 - 10 + 1 \\
 5 + 5 = 10 \quad 5 + 5 = 20
 \end{array}$$

93

$$100 \rightarrow = 93$$

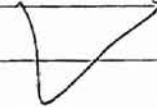
$$93 - 0$$

93

$$10 + 30$$



$$40 + 50$$



$$90 + 3$$



$$93$$

$$9 \times 10 + 3$$

$$9 \times 10 + 3$$

APPENDIX E

ADDENDUM

Second Grade Students' Perceptions of a Constructivist Classroom

Addendum

Initially a fifth grade classroom was to be used for this study. Piaget's theory of constructed learning and his description of developmental stages is most often discussed in early childhood levels. For this reason identifying a fifth grade constructivist classroom and interviewing the students on their perceptions would be of particular interest.

However, because of this lack of interest in constructivist theory in upper elementary grades it proved impossible to identify a fifth grade classroom.

As a result of this and time constraints a second grade class was identified. The results of this study will still be of interest because it is looking at how children perceive a constructivist classroom. Often in educational research the student's voice isn't heard.

APPENDIX F

INSTITUTIONAL REVIEW BOARD FORM

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW

Date: 10-14-96

IRB#: ED-97-022

Proposal Title: FIFTH GRADE STUDENT'S PERCEPTIONS OF A
CONSTRUCTIVIST CLASSROOM

Principal Investigator(s): Kathryn Castle, Valorie Colleen Lewis

Reviewed and Processed as: Modification

Approval Status Recommended by Reviewer(s): Approved

ALL APPROVALS MAY BE SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD
AT NEXT MEETING, AS WELL AS ARE SUBJECT TO MONITORING AT ANY TIME DURING
THE APPROVAL PERIOD.

APPROVAL STATUS PERIOD VALID FOR DATA COLLECTION FOR A ONE CALENDAR YEAR
PERIOD AFTER WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE
SUBMITTED FOR BOARD APPROVAL.

ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR
APPROVAL.

Comments, Modifications/Conditions for Approval or Disapproval are as follows:

Signature:



Chair of Institutional Review Board

cc: Valorie Colleen Lewis

Date: March 10, 1997

2

VITA

Valorie Colleen Funkhouser Lewis

Candidate for the Degree of

Master of Science

Thesis: SECOND GRADE STUDENTS' PERCEPTIONS OF A CONSTRUCTIVIST CLASSROOM

Major Field: Curriculum and Instruction

Biographical:

Personal: Born in Cambridge, Ohio, the daughter of Jim and Sue Funkhouser. Attended elementary school in Australia, 1981-1983. Attended Ponca City High School, 1984-1987.

Education: Graduated from Ponca City High School, Ponca City, Oklahoma in May, 1987. Attended Oklahoma State University, Stillwater, Oklahoma. Received Bachelor of Science degree in 1992 with a major in Elementary Education and a minor in Psychology. Completed the requirements for the Master of Science degree with a major in Curriculum and Instruction at Oklahoma State University in May, 1997.