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A case study of a school implementing a constructivist philosophy

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A Case Study of a School Implementing a Constructivist Philosophy

by

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ABSTRACT

Isaacson's (2004) dissertation chronicles the implementation of a constructivist instructional approach at Southwood Elementary School. Southwood's faculty experienced a change of principals, which the Tri-Partite Theory of Organizational Change and Succession, a theory of organizational entropy, predicts could lead to organizational entropy. This study examines the dynamics of the change in principal, as well as Isaacson's recommendation to study teachers' perceptions regarding the maintenance of the constructivist approach. This study answers three questions: 1) Are faculty still using constructivist strategies? 2) What are teacher perceptions regarding the maintenance and support of constructivist philosophy? 3) Is there congruence between what literature identifies as constructivist strategies and what teachers identify as constructivism and classroom practice?

This study uses three sources. First, literature identified constructivist strategies and approaches. Second, teachers and principal were interviewed regarding an array of issues, such as their understanding constructivism, their perception of maintaining the constructivist philosophy, and student and teacher classroom roles. Third, classrooms were observed and scored using the Constructivist Teaching Inventory (CTI) as a rubric.

The primary and an outside researcher identified four common themes that all support constructivist practices and philosophies: questioning, student-centered learning, active learning and the social influence on learning. Classroom observations, three for each of the interviewed teachers, were scored using the Constructivist Teaching Inventory.

Southwood faculty and staff developed professional learning communities (PLC), which support and maintain constructivist strategies. PLCs are supports for new teachers in developing constructivist strategies. CTI results indicate that teachers are implementing constructivist strategies. Constructivist strategies could be implemented by telling teachers what to say or do, without understanding the why behind the actions.

Although the principal, who initiated application of constructivist strategies retired and was replaced in 2004, constructivist strategies remain in use. The changes that occur with change in leadership, as predicted in the Tri-Partite Theory, were managed at Southwood by an internal replanning process of establishing PLCs. This study lends credence to the importance of professional learning communities as a constructivist change strategy, which finessed the entropy organizations face with leadership changes by establishing PLCs as a socialization process.

Chapter 1

Background and Purpose of Study

School administrators struggle with the issue of balancing the need for students to score well on the statewide assessments and teachers using instructional methods that have high engagement for students. Research has shown that teachers, in order to respond to high-stakes testing, tend to take less risk in their instructional approach and, consequently, employ a traditional lecture style approach (Windschitl, 2002). An elementary school in Orlando, Florida, Southwood has apparently accomplished the needed risk/change balance through the application of constructivist learning theory. Southwood Elementary School is a leading elementary school in the State of Florida. This claim is supported by data that includes evidence of a state grade of "A" in each of the last four years. In addition, the school has met the Federal Adequate Yearly Progress criteria for three years. The school also boasts 13 Nationally Board Certified Teachers on staff, with seven more in the application process. Notably, Southwood Elementary School does not use textbooks but rather, a teacher designed curriculum based on concepts enhanced by the use of higher order thinking questions. The first school principal, Dr. Isaacson, with the assistance of Dr. Arthur Shapiro (a professor in the Department of Educational Leadership and Policy Studies at the University of South Florida) who served as a consultant, implemented constructivist educational teaching practices at the school; using a constructivist teaching philosophy as a model for change. Dr. Shapiro, a co-chair of this dissertation, developed the constructivist change strategy, titled the Analysis of Dynamics of Organizational Change, utilized to change the Southwood Elementary School into practicing constructivism. Dr. Isaacson chronicles the change process in her 2004 doctoral dissertation *Teachers ' Perceptions of Constructivism as an Organizational Change Model: a Case Study* (Isaacson, 2004).

The concepts and understandings of constructivism will be examined later in this chapter as well as in Chapter 2. Isaacson (2004) defined constructivism as,

> an epistemology, a learning or meaning-making theory, that offers an explanation of the nature of knowledge and how human beings learn. It maintains that individuals create or construct new understanding through the connection of what they already know and believe, together with newfound learning, and draw their own conclusions. Knowledge is acquired through interactions with the content and other people instead of through memorization (p. 14).

Isaacson was fully aware that the Southwood Elementary students had to perform well on state mandated tests, if the school district were to continue giving the faculty leeway for the use of this unique approach. Isaacson and her staff worked for months developing a concept-based curriculum, which interwove all academic disciplines. She also hired and trained new staff. The application of the constructivist learning theory has continued at Southwood following Isaacson's 2004 retirement, with Isaacson's former Assistant Principal as the new principal.

When Southwood began, Isaacson worked with her staff to develop a concept-based curriculum, based on the model of Erickson (1994). Isaacson challenged her staff to consider the ramifications of using concept-based curriculum by asking them to reflect on the methods and to suggest improvements. The staff training centered on practical applications, including hands-on activities and problem-solving strategies. Isaacson (2004) details in her dissertation the journal she kept as principal. The journal shows that, though Isaacson knew it was a constructivist approach, she did not express such overtly to the teachers. Her journal reflects that the school faculty began using the term "constructivist" during the third year when the consultant began. Prior to that time, the faculty focused on instructional strategies.

Isaacson felt it was more important to model the desired behavior during faculty meetings and staff trainings. She instituted professional learning communities at Southwood in which teachers worked together to identify personal growth areas. In a professional learning community, the talk is focused on improving instruction (Dufour & Eakers 1998). In addition to the

professional learning community, Isaacson also implemented support and study groups for teachers as well as a peer mentoring and coaching program. The mentoring and coaching groups all support a professional learning community.

Isaacson's approach to training focused on strategies that teachers would implement in their classrooms. The strategies taught support the concept-based curriculum and focus on higher order thinking skills. The teachers at Southwood were implementing a constructivist approach to instruction, accomplished by a school-wide change strategy based on constructivist principles. Isaacson's dissertation details the change process and describes teachers' perceptions of the change strategy.

Isaacson's second research question asks for teacher perceptions of developing a constructivist philosophy in an entire elementary school. Isaacson reports three main themes from the teachers' perceptions.

> First, it is important to have the same philosophy so that everyone works with the same belief system and toward the same goal. Second, the principal must provide the vision. Teachers feel successful because the vision never changes and everyone agrees with the philosophy (or they wouldn't be there). Third, if the school only had pockets of teachers with the same philosophy, the school wouldn't work. Everyone must believe in the constructivist approach. People who don't believe in it can go to schools that have single textbooks and teach to the tests (p. 230).

In discussing testing, Isaacson says that, even though Southwood earned an "A" the past two years when she wrote her dissertation no one commented about standardized testing in any of the reflections. She states that teachers believed that the constructivist strategies, which were being implemented, prepared the students for the statewide assessment. In addition, Isaacson points out that each year, teachers become more sophisticated in their ability to think, reason,

solve problems and make decisions, while thinking at a higher level. Teachers and students become collaborators in learning.

Teachers also described the importance of a continuity of student learning from one grade to the next. When the language for discussion of constructivist belief remains constructivist, student learning continues to build on familiar concepts. The same is true for teachers. When the language for the community team remains constructivist among teachers, the ability to build stronger instructional strategies becomes evident. Isaacson (2004) says that constructivist beliefs are built upon numerous concepts and described by teachers with terms identified earlier, e.g., hands-on experiences, problem solving, decision making, thinking at the higher level, proving questions, understanding the background of students and their prior knowledge.

Entropy is a word used to describe the loss of energy of systems. According to Shapiro, Benjamin and Hunt (1995), organizational entropy occurs so gradually over the months and years that its members do not recognize their loss of vigor or vitality. They go on to add that "the Tri-partite Theory of Institutional Change and Succession, suggests that institutions and organizations change in a definite, predictable sequence which, when understood, can be purposively redirected and managed" (p. 97). Institutions, they suggest, are susceptible to one of three institutional orientations – Person, Plan or Position. In the person-orientation, the majority of the members are loyal to an attractive, dynamic leader who captures their imagination. In the plan-orientation, members support and are motivated by some level of planning. In the position-orientation, status quo is maintained, purposes are lost or forgotten; and ossification sets in.

Isaacson refers to the Tri-partite Theory of Institutional Change and Succession (Shapiro, Benjamin & Hunt, 1995) as a call for a routine maintenance of the constructivist philosophy in order to avoid organizational entropy. A maintenance plan would review the previous plan, examine outcomes and determine if new outcomes are needed or old outcomes can be deleted, as

well as develop and implement a plan to carry them out. In short, a maintenance plan involves re-planning to implement a constructivist approach.

Background on Constructivism

To discuss constructivist education, we must first define constructivism and, second, describe the various notions of constructivism appearing in the literature. Constructivism has its foundation in philosophy (Smith, 1999). Constructivism is an epistemology, a philosophical explanation about the nature of knowledge (Airasian & Walsh, 1997). Some researchers credit Immanuel Kant as the father of constructivist thought (Neiman, 2001). Others suggest constructivism can be traced to Socrates. While Socrates taught via questions, Kant argued that certain aspects of our knowledge of the physical universe are the products of our own cognitive apparatus. We "construct" the universe to have certain properties; or rather, our faculty of understanding imposes these temporal and spatial properties on our experiences (Phillips, 2000). This genesis of thought has given rise to various interpretations of constructivism, such as, moderate social constructivism and radical social constructivism and moderate and radical psychological constructivism.

Moderate Social Constructivism

One category of constructivism is social constructivism (Phillips, 2000). The first premise of social constructivism deals with the "source of knowledge"; what we know has been built up, "constructed," over the ages and has been influenced by culture, politics, religion, ideologies and other human interests (Phillips, 2000). There is not an external truth to be known, since knowledge is that which has been agreed upon by societies. Phillips (2000) also points out that social psychologist Kenneth Gergen, a modern proponent of social constructivism, acknowledges the importance of language in the role of knowledge. For a society to construct knowledge there must be a vehicle through which to confirm this knowledge and to share it with others. Gergen believes that knowledge can be shared among peoples. Language then becomes a

necessity through which knowledge is confirmed and shared. Some would argue that constructivism itself is a social practice, a manner of learning that requires participation in an activity (Sheehy, 2002).

Vygotsky, also regarded as a social constructivist (Green & Gredler, 2002), developed the concept of the, "zone of proximal development" by which the effects of social construction can be better understood. The zone of proximal development refers to the range in developmental levels of knowing, from what a student can learn independently to what a student can learn in dialogue with others guided by a more competent peer (Vygotsky, 1978). Vygotsky, like Gergen, sees the importance language has in child development and knowledge construction. Through dialogue, words develop a shared definition understood by those in dialogue. This shared meaning can be built upon to understand new knowledge and concepts (Vygotsky, 1978). This approach focuses on the importance of the social setting to facilitate construction of new knowledge. Vygotsky argues that through interaction by people, knowledge and ideas, the individual becomes prepared for new knowledge. Students construct new knowledge as old knowledge is applied in a social setting, and reflections are made on that application. Children bring developmental history to the zone. Adults bring a support system. As children and adults interact, they share cultural tools. This culturally mediated interaction is what yields cognitive change. This interaction is internalized and becomes a new function of the child (Bruning, Schraw, Norby & Ronning, 2004). For example, as a child learns to read he encounters words of which he knows neither the pronunciation nor the definition. With help from an adult, the child sounds the word out and learns the definition of the word. The new pronunciation and proper use of that word becomes internalized by the child.

The approaches of Gergen and Vygotsky have implications in the classroom because of the belief that knowledge is constructed by the individual in a social context. This belief has implication in how classroom activities should be structured to make the learning active. Also

understood is the position that whatever knowledge is constructed is valid knowledge, even though it may be contradictory to what is a shared conceptual knowledge (Phillips, 2000). Gergen argues that if society agrees to believe this knowledge, then, it will become a shared knowledge. An example would be the long held belief that the world was flat. That kernel of knowledge was a false kernel of knowledge, but it was not known to be false for years and hence held by society to be true. For Gergen and Vygotsky, when students are presented with new knowledge, students compare and analyze it against what is already known. This analysis may enable the construction of new knowledge.

Radical Social Constructivism

One could think of social constructivism as running along a continuum of the interaction between social influence and knowledge. At one extreme, knowledge is determined and explained by society. At the other extreme, according to Bredo (2000, as cited in Phillips, 2000) the reactionary claims that science only becomes scientific when it sheds any trace of social construction. This latter extreme is commonly known as radical social constructivism. Because some researchers take such a strong position regarding the influence of society on knowledge, this position is also known as the Edinburgh Strong Program, dealing with the sociology of knowledge (Merton, 1957; Bloor, 1976). The founding sociologists of this train of thought were commonly called the Edinburgh School. According to Phillips (2000), "This school holds that the form that knowledge takes in a discipline can be fully explained, or entirely accounted for, in sociological terms" (p. 8).

Slezak (2000) reflects on radical social constructivism when he says, "the doctrines of radical social constructivism take scientific theories to reflect the social milieu in which they emerge and, therefore, rather than being founded on logic, evidence and reason, beliefs are taken to be the causal effects of the historically contingent, local context" (p. 93). Knowledge then becomes consensus upon some thought, formula or convention. Phillips (2000) points out that

there is a lot at stake in the argument that science is a knowledge warranted by logic, evidence and mathematical augmentation. The battle between opposing sides has been labeled the "Science Wars." The pedagogical implications of radical social constructivism are major. If knowledge is what society agrees on, then Slezak argues, "…education becomes indoctrination, pedagogy is propaganda, and ideas are merely conventional conformity to social consensus" (p. 93).

Moderate Psychological Constructivism

This leads to another category of constructivism known as "psychological constructivism". Psychological constructivism addresses the manner in which people learn. The basic premise being that knowledge is made, not acquired. Psychological constructivists do not focus on what should be known, but rather how it is known. Jean Piaget, a noted Swiss developmental psychologist, theorized that children construct knowledge from their actions on their environment (Wadsworth, 1989).

The process of learning involves both the learner and the knowledge being learned. David Perkins (1999) identifies three roles for the learner. First is the learner who acquires knowledge actively. Second is the social learner who co-constructs knowledge in dialogue with others. Third, the creative learner needs to create or recreate knowledge for himself. Perkins also identifies three kinds of knowledge. First is inert knowledge that is gained by solving problems that make connections to the world. Second is ritual knowledge that is acquired via authentic problem solving and makes learning meaningful. Finally is the conceptually difficult knowledge, which is gained through inquiry that confront initial theories or prior knowledge. Through this better understanding of the process of learning, constructivism is then seen as a toolbox. Troublesome knowledge invites responses to fit the difficulties – there is not one standard constructivist fit (Perkins, 1999).

Radical Psychological constructivism

Von Glasersfeld, a noted psychologist, has formed the foundation for what is known as "radical" psychological constructivism (Phillips, 2000). This philosophy insists that human knowledge cannot consist in an accurate representation of an external reality, existing apart from the subject's experiences (McCarty & Schwandt, 2000). Take for example the color blue. Von Glasersfeld argues that "blue" is to be known only by the individual, there is not a shared knowledge of "blue." He would ask, "How can I be sure that my 'blue' is the same as your 'blue?'" In this light, all learning is constructivist, no matter what instructional approach is used, just because of how the mind operates (Windschitl, 2002).

Shapiro (2003) points out that while Von Glasersfeld is correct because our experiences are different we do not see the same things in a similar way. However, Von Glasersfeld did not acknowledge the importance of a shared culture nor the impact of a common language in that culture. Mead (1934, as cited in Shapiro 2003) points out that Von Glasersfeld forgot that the self and mind are socially formed.

Summary

While constructivism is not an instructional approach, it is a theory about how learners come to know (Airasian & Walsh, 1997). As the philosophy of constructivism is applied to learning, it is seen as a process in which learners actively explore knowledge and link this knowledge to previous experiences (Alesandrini & Larson 2002; Gregory 2002; Pugalee 2001). Gregory (2002) also adds that this new meaning is verified by applying it to future experience. Learning thus becomes an active process through which knowledge is constructed by applying new concepts to prior experience and knowledge.

Although it might provide a model of knowing and learning that could be useful for educational purposes, currently the constructivist model is descriptive, not prescriptive (Airasian & Walsh, 1997). Constructivism is heavily grounded in psychology and social science research, both of which have intellectualized the perception of learning (Windschitl, 2002). There are many

definitions and conceptions of constructivism and learning. The epistemological assumptions of constructivism suggest that the world is knowable only through the interaction of knower and experienced phenomena (Windschitl, 2002). Based on the definition and conception employed, classroom implications vary.

Statement of the Problem

The Tri-Partite Theory of Organizational Theory of Organizational Entropy, suggests that organizations lose their effectiveness so gradually that its members do not recognize the loss of effectiveness. Therefore, the investigation of Southwood will determine if the constructivist philosophy, as Isaacson defined it, had developed and endured since the school experienced a change in principals. Isaacson also recommended a study regarding the endurance and maintenance of the constructivist instructional approach at Southwood, which involves replanning.

Purpose of the Study

The purpose of this study was to gather teacher perceptions regarding the maintenance of the constructivist philosophy at Southwood Elementary School. Additionally, this study sought to determine the level of constructivist strategies used in various classrooms. This purpose answers Isaacson's call for future research to determine how the constructivist philosophical approach is being maintained. A second purpose of this study is to examine how the school managed the transition to a new principal, in light of the Tri-Partite Theory of Organizational Change and Succession.

Research Questions

Answers were sought to three questions related to the educational model employed at Southwood Elementary School.

1. Is the faculty still using a constructivist educational approach as determined by the Constructivist Teaching Inventory.?

2. What are teacher perceptions regarding how they are being maintained in their practice of constructivist philosophy?
3. Is there congruence between what research (as outlined in the review of literature) defines as constructivist education, teachers' understanding of constructivist education, and classroom practice?

Significance of the Study

This study has significance in various areas. First, the former principal who orchestrated the change to a constructivist model has retired, replaced by her assistant principal. The answers to the research questions can show the importance of conceptual understanding in the development and maintenance of the constructivist model.

The findings of this research might identify the mechanics and processes used to maintain the philosophical focus and a persistent understanding and use of constructivism. Though Southwood employs constructivism school-wide, there are constructivist approaches used in various programs, such as mathematics and science (Abbott & Fouts 2003; Hirumi 2002; Fluellen 2003; and Gijbels, Dochy, Van De Bossche and Segers 2005). The findings of this study may assist in the training and maintenance of these approaches.

Lacking in current literature concerning constructivism is teacher perception of the maintenance of the constructivist approach. The present research study may also illuminate teacher perceptions of teaching via a constructivist model.

Limitations of the Study

There are limitations to this study. First, there is only one Southwood Elementary School, so the answers to the research questions are very specific to this locale and may not be generalizable to other locations. Second, the questions asked, and the classroom observations conducted, though intended to be as broad as reasonable, are still confined to the questions asked, leaving questions unasked and thus unanswered. Third, the current research project is a qualitative study in which the present author is also researcher. The researcher's knowledge has been formed by previous experiences, which thus ordains a certain bias in researcher perception and observation. These biases are not intentional or malicious, but there exists a possibility that someone with a different background and experience might perceive the same event differently.

The research questions of this study concerned teacher understanding and implementation of constructivist approaches. The focus of this study is to examine the variance in the understanding and implementation of teachers with a variety of experience. That is why a purposeful sample was chosen for this study. However, it was not a random sample. The principal, due to impending teacher cuts and end of the year decisions, was concerned with a random sample, and selected the twelve teachers that met the requirements of a varying of years experience. The principal was concerned about a mixed message if randomly selected teachers were slated to be lost due to teacher cuts, She did not want teachers to mistake taking part in the study had anything to do with the loss of position. This selection process could have tainted the data gathered by selecting only those teachers who had a high degree of understanding or implementation and a strong likelihood of a continuing Southwood contract,

Assumptions

Two basic assumptions are made in this research effort. First, the level of trust between the researcher and staff at Southwood Elementary School has yielded honest responses to the interview questions posed. This assumption is made because the researcher is an unknown person with no connection to, or responsibility over, the school faculty. Thus, there is no inherent reason for the staff to color the research process. The second assumption is that the interview questions and classroom observations have yielded reliable perceptions of the issues of constructivist education.

Definition of Terms

Concept-based curriculum: a curriculum design model in which curriculum is designed around broad concepts that serve as a bridge between topics and generalizations. The design allows for integrated subjects leading students to use higher order thinking skills (Erickson, 2001).

Constructivism: an epistemological philosophy that explains that people construct knowledge

through the interaction of their experience and knowledge with new material. Consequently, this interaction yields new understandings (Isaacson, 2004).

Perception: an individual's insight and understanding of a phenomenon gained through the senses. (Psychological Dictionary).

Traditional education: a curriculum model built on discrete subjects, topics and content. The focus is on memorization of an expanding body of facts and practice of skills (Erickson, 2001).

Professional learning community: can be described by three general features: 1) teachers pursue a clear shared purpose for all students' learning, 2) teachers engage in collaborative activity to achieve this purpose, 3) teachers take collective responsibility for student learning (Newman & Wehlage, 1995).

Capacity: the ability to solve problems and renew the school (Dufour & Eakers, 1998).

Tri-partite Theory of Institutional Change and Succession: the theory that suggests that institutions develop in a definite predictable sequence which, when understood, can be predicted and managed (Shapiro, Benjamin & Hunt, 1995).

Metacognition: refers to the higher order thinking which involves action control of the cognitive process engaged in learning. Simply, metacognition is thinking about thinking. (Livingston, 2003).

Scaffold instruction: the systematic sequencing of prompted content, materials, tasks, and teachers and peer support to optimize learning (Larkin, 2002).

Summary of Chapter

This chapter relates how the researcher became acquainted with a former principal who used a constructivist philosophy as a model for change to implement a constructivist educational model school. The Tri-Partite Theory supported by Isaacson's (2004) dissertation recommend that future research address the maintenance and endurance of the constructivist model.

In this chapter, this researcher also presents the research questions and the significance of findings. This researcher sought to gain a greater knowledge of teacher understanding of constructivism in the maintenance and endurance of a constructivist a model.

Organization of the Chapters

Chapter 2 presents a review of literature describing notions of constructivist philosophy. This philosophy serves as a foundation for the application of constructivism in the instructional model. Literature relative to the constructivist education is also reviewed.

Chapter 3 presents the methodology used, including timeline and selection of interviewees. Also included in the chapter is a description, along with assessment information, of the classroom observation tool employed in this study.

Chapter 4 reviews the data gathered from the interviews with the current principal and teachers. Classroom observations were made and scored using the Constructivist Teaching Inventory as a rubric. The scores from the classroom observations are detailed in Chapter 4.

Reflections on the data, along with identification of implications for the study and future research are discussed in Chapter 5. This chapter also provides answers to the research questions based on the findings in this study, conclusions, implications and recommendations for future research.

About the Researcher

As I am part of the research method, I must first define who I am. I am a lifelong resident of Florida. I received a Bachelor's degree in the field of Philosophy from St. John Vianney College Seminary, a small private college in Miami, Florida. I received a Master's degree in Counselor Education from the University of South Florida and a second Master's degree in Educational Leadership from the University of South Florida. I am currently completing the research phase for my doctoral degree in Educational Leadership at the University of South Florida.

After completing the Master's degree in Counselor Education, I began work at a parochial school, serving both as a math teacher and guidance counselor. After three years in the private school, I took employment in the public school system as a guidance counselor. I transferred to a middle school in the south end of the Tampa as a counselor. After serving as a counselor for seven years, and earning a Master's degree in Educational Leadership, I was appointed assistant principal at the same south Tampa middle school. After serving as assistant principal for five years, the principal retired and I was afforded the opportunity to become principal. I served as principal of that school for close to four years when I was reassigned to a new middle school in the inner city.

As of this writing, I have been in education 20 years, 11 as a counselor, five as assistant principal and four as principal. I spent 13 years at the same school. That school experienced great success based on FCAT scores and school climate surveys (surveys completed by randomly selected students, parents and faculty)

Chapter 2

Review of Literature

Epistemology is a philosophy of knowledge of how people learn and accumulate knowledge. Epistemology is used by some as a basis in the field of psychology. Among the epistemological theorists over the decades was Piaget, a Swiss psychologist, who studied children and their intellectual capacities at different stages of development. Piaget is credited by some researchers as the first to claim that children construct their knowledge through interaction with the world around them. Some psychologists have used Piaget as a basis for their theories of a brand of constructivism. As this study is concerned with the application of constructivism in a school setting, the present chapter explores the nature of constructivism, constructivist pedagogy and standards, assessments, teachers' roles. It also considers concept-based curriculum, the design of concept based curriculum and teaching for essential understanding. The chapter then examines the role discourse plays in a constructivist classroom. The notion of the professional learning community and the Tri-Partite Theory of Organizational Change and Succession, a theory of organizational entropy.

Constructivism

Variations of constructivism are found in literature. Matthews (2000) identifies eight dimensions of constructivism: Constructivism as a theory of, cognition, learning, teaching, education, personal knowledge, scientific knowledge, educational ethics and policies, and a worldview. Matthews argues that each dimension can stand independently from the others, citing by example the case of Thomas Kuhn who held a constructivist theory of science, yet was an advocate of anti-constructivism as pedagogy. The present research paper examines the application of constructivism in the elementary classroom. Thus, the focus of the literature review, as regards constructivism, will be on constructivist pedagogy.

Constructivist Pedagogy and Standards

Howe and Berv (2000) contend that constructivist pedagogy should embrace a constructivist learning theory and mix constructivist and non-constructivist teaching techniques as appropriate. A general understanding of constructivism assumes that students determine the content to be studied. Based on this assumption, some educators would avoid constructivist methods due to the needs of students to master certain standards. Howe and Berv (2000) have shown the ability to meet standards using a constructivist approach when they say,

> Constructivist practitioners are not precluded from using direct methods of instruction. Instead one can present complex conceptual schemes to students: one can "lecture" or thus, or be part of the dialogue, while avoiding the presupposition that these conceptual schemes are independent of history or culture or are impervious to challenge. The constructivist educator must actively promote a fallible view of knowledge by inviting critical perspectives to be brought to bear on these conceptual schemes. (p. 36)

Windschitl (2002) describes five myths associated with constructivist education (a) direct instruction has no place in the constructivist classroom, (b) constructivism is nothing more than discovery learning, (c) students must be physically or socially active, (d) all ideas and conjectures are valid, and (e) there is no rigorous assessment.

Reflecting on Windschitl's (2002) myths brings to the fore his discussion on the political dilemma of constructivism. Part of the dilemma involves the political nature of education: what is taught and how it is assessed. He also argues that teachers are pressured to use methods of direct instruction to teach objectives of minimum competency. Windschitl (2002) gives four reasons for the importance of standards. First, there is a practical value in the knowledge generated in the subject area disciplines. Second, students will find most of the knowledge useful and meaningful. Third, standards are important for the sake of processing norms valued in the subject area disciplines. Fourth, without training in the disciplines, students will not be able to participate in its development – its growth and change. There is a perception that constructivist education is not

rigorous and ignores standards. Windschitl (2002), as Howe and Berv (2000), concludes by saying that he believes constructivist pedagogy can be reconciled with education towards discipline-based standards, so long as learning is understood as an appropriation of predetermined standards that involve student self-correction and self-verification.

Constructivist Pedagogy

If constructivism is an epistemology, a study of the way people learn, then a constructivist pedagogy would be instructional strategies that complement the constructivist belief of how people learn. Piaget argues that children are motivated to restructure their knowledge when they encounter experiences that conflict with their prediction. This is called disequilibrium. Piaget further argues that teachers, interested in helping children acquire knowledge, will develop methods that encourage disequilibrium so that children, in their own way, will re-establish equilibrium through active methods (Wadsworth, 1989). Brooks and Brooks (1999) developed five tenets of constructivism that provide the groundwork for a constructivist classroom: (a) constructivist teachers seek and value student's point of view, (b) teachers structure lessons to challenge students suppositions, (c) teachers recognize that students must attach relevance to the curriculum, (d) structure lessons around big ideas, and (e) assess learning in context of daily investigations.

In similar fashion, Gregory (2002) describes six points which he applies to a community of inquiry: (a) construct experience and knowledge of others into a form that is meaningful to an audience, (b) must be a dialogue between the proponent of a new idea and those she hopes to convince, (c) experts and teachers must listen to and actually become vulnerable to critiques by members of their communities, (d) each community should follow the inquiry where it leads, (e) meta-level inquiry regulates communities' inquiry practices, and (f) summative evaluations conserves standards of the discipline regarding knowledge and practice.

Windschitl (2002) notes one of the main problems in implementing a constructivist approach in a classroom, is that most teachers were educated under a different approach, and thus teachers do not have the conceptual experience by which to model their classroom. A common misconception that teachers make is that hands-on activity is synonymous with a constructivist activity (Alesandrini & Larson, 2002). We do not have an "instruction of constructivism" that can be readily applied in classrooms. However, there are suggestions for methods that would more likely foster students' construction of knowledge, primarily those that emphasize non-rote tasks and active student participation in the learning process (Airasian & Walsh, 1997).

A basic activity of teachers is lesson planning. In designing constructivist lessons teachers must include conjectures about student thinking (Windschitl, 2002). Constructivist pedagogy and educators scaffold the student's active intelligence (Gregory, 2002). Driver & Bell (1986) say that learning science is more than taking in of new information but also restructuring of the concepts or frameworks the learners already have. They continue to say that it is not so much what we abstract from a situation but what we bring to it that determines the sense we make of it.

Alesandrini and Larson (2002) identify the components found in a constructivist lesson: conceptualization, clarifying, inquiring, planning, realizing, testing, modifying, interpreting, reflecting and celebration. Windschitl (2002) identifies some guidelines when planning a lesson: (a) teachers must be aware of the student's prior awareness of ideas, (b) teachers need a clearly defined conceptual goal, (c) they need to include teaching strategies that challenge initial ideas, (d) the plans need to offer opportunities to utilize new ideas, and (e) the teacher needs to create classroom environment which encourages students to put forth and discuss ideas.

Mowatt and VanName (2002) present a checklist for teachers containing a series of questions and issues that need to be answered before incorporating a constructivist approach into a classroom. Issue one is the personal readiness to be a facilitator. This component requires the

person to know his/her own learning style, and respect the learning styles of others. This component also requires the person to understand group processing and make decisions based on the observations to optimize group functioning. Component two involves the structuring of the environment, making sure that the room is set up to encourage group work, by having desks arranged appropriately and enough seats for everyone. Component three is focused on setting the tone. The tone is set by addressing various issues: first, the environment needs to be safe so everyone is comfortable sharing ideas, knowing all contributions are valued, and confidentiality is maintained. Social and physical needs are addressed by having small groups, which encourage contributions, and all contributions are acknowledged and recognized. The instructional format component requires an agenda that sets the work for the day and group work, work and reading are assigned for the next class. The facilitator interjects key points to link previous knowledge to new concepts. The final component calls for the teacher to watch and observe the group work and facilitate discussion.

Scheurman and Newmann (1998) make a case for a meaningful and authentic construction of knowledge. There is a distinction made between a student being able to re-transmit material learned and the student having a deep understanding of that material. The teacher needs to structure meaningful activities on the foundation of disciplined inquiry. For example, for a constitutional lawyer, disciplined inquiry means understanding the essential assumptions underlying common law, recognizing the intricacies of U.S. judicial proceedings and being able to do the detective work of a good historian. Disciplined inquiry includes a command of facts, vocabulary, concepts and theories used in a domain. Conventional schoolwork seldom engages students in this kind of inquiry and communication practices.

Assessment

Another major issue in education is assessment. The State of Florida has the Florida Comprehensive Achievement Test as a statewide assessment. More important than the annual

FCAT is how students are assessed on an ongoing basis. In a more traditional, direct instruction approach, students would be given written tests after a certain amount of material had been covered. In the constructivist classroom, assessments are made daily, and within the context of the inquiry. However, constructivist pedagogy faces the dilemma that education in self-correction inquiry is not necessarily conducive of, and in fact may be antagonistic to, the achievement of educational standards (Gregory, 2002).

In the constructivist classroom, assessments are made continuously. The assessment process becomes part of the instruction process as teachers guide students to refine their newly constructed knowledge. Assessments are seen as formative, prompting students to rethink and inquire further (Gregory, 2002). A key component to constructivist thinking is that the learner is a self-assessor (Alesandrini & Larson, 2002; Gregory, 2002). In fact, it is through the self-assessment activities of reflection and verbalization that learners actually realize the meaning of what they have experienced (Alesandrini & Larson, 2002). The teacher distributes her own assessment skills and authority to her students (Gregory, 2002). Gregory goes on to say that constructivist pedagogy may then be seen as an apprenticeship in self-correction, in which the students' capacity to construct and verify new knowledge for themselves within a discipline becomes increasingly informal by the norms of that discipline. Von Glasersfeld (1998) cautions that teachers who tell students that their answers are wrong will dry up students' enthusiasm. However, if teachers question students as to how they arrived at the answer, students could see for themselves that something had gone wrong, thus reinforcing the fact that students are capable of constructing solutions.

Role of the Teacher

In what would be considered a traditional approach, the teacher is the dispenser of knowledge. The teacher has the knowledge and the answers. The role of the teacher in a constructivist environment is quite different. Teachers who take this path must work harder,

concentrate more, and embrace larger pedagogical responsibility than if they only assigned text chapters and seatwork (Windschitl, 2002). The teacher is viewed as a guide, a facilitator, to assist students to make their own connections (McKeown & Beck, 1999). Because the constructivist approach captures thinking in action, the teacher's role is to know what to expect while being flexible (McKeown & Beck, 1999). The teacher has to be very knowledgeable of the material. Teacher comprehension is even more critical for the inquiry-oriented classroom than for the didactic alternative (Windschitl, 2002). In constructivist classrooms, facilitation becomes an elaborate set of strategies from which teachers select to support the increasingly autonomous intellectual work of students (Windschitl, 2002). The expertise of the constructivist teacher lies in her ability to judge when and how to intervene in student inquiry to facilitate student self-correction towards the standards (Gregory, 2002). The toughest issue in developing a constructivist environment is to treat student's comments in such a way that they invite other students to extend and elaborate on them, moving the discussion forward in a meaningful way (McKeown & Beck, 1999).

Concept-Based Curriculum

The 1994 reauthorization of the Elementary and Secondary Education Act of 1965 called for the development of educational standards. These standards were developed by experts in the various fields and deemed essential knowledge. Erickson (2002) points out three false assumptions associated with standards. The first false assumption is that standards have identified essential understandings. The standards, which identify essential content and skills, assume that teachers will lead students to an essential understanding of the important concepts. The second false assumption is that we assume teachers know how to measure essential understandings. In reality, teachers have been trained to measure factual knowledge and skills. The third false assumption is that we assume essential understanding will occur without a conceptual lens.

Teachers and students cover facts but without a conceptual lens, the students are not challenged to think beyond these facts and figures.

In their book, Brooks and Brooks (1993) lay out five principles of implementing constructivist thought in classrooms. One of the principles is to structure learning around primary concepts, which they say is a critical dimension in constructivist pedagogy. Traditional education breaks the whole into parts and skills which students are taught in sequence. Brooks and Brooks liken this to assembling a bicycle. The box comes with many parts, and even though the bicycle comes with precise written directions, we still look at the picture on the box. We need to understand the whole before we can make sense of the parts. Driver, Asoko, Leach, Mortimer and Scott (1994) say, "That even in relatively simple domains of science, the concepts used to describe and model the domain are not revealed in an obvious way by reading the 'book of nature.' Rather, they are constructs that have been invented and imposed on phenomena in attempts to interpret and explain them" (p. 6).

Von Glasersfeld (1995) argues for the need to teach conceptual understanding. He points to the preponderance of literature calling for better problem solving skills, stating that unless problems present themselves in the same fashion that the material is taught during instruction then there is little hope in solving novel problems. The ability to solve novel problems lies in the conceptual understanding, not just of building blocks of information but also the conceptual understanding of the relationships between these building blocks. Brooks and Brooks (1999) state that

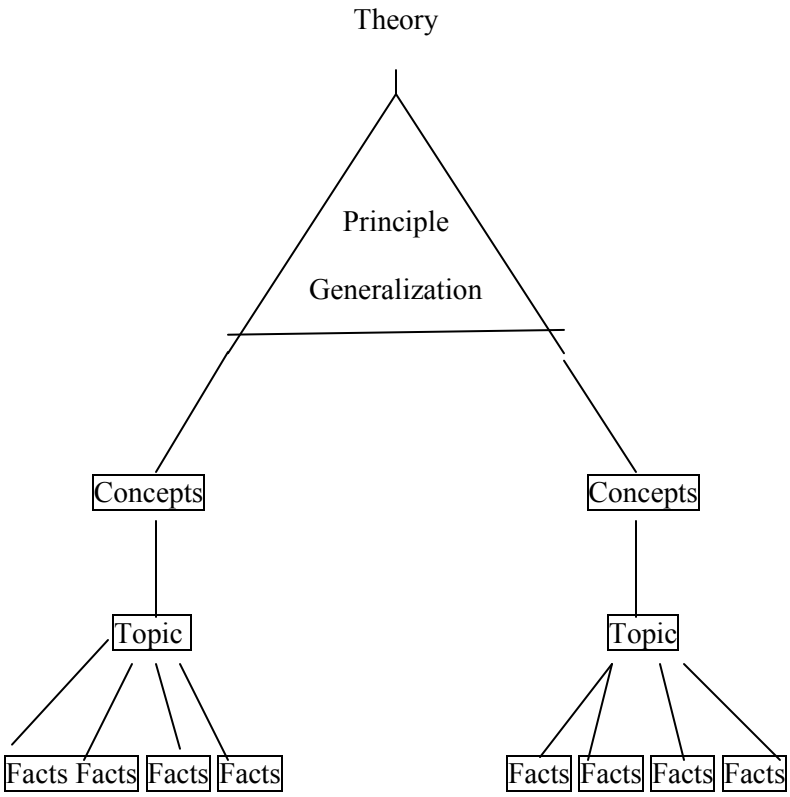
> Having curricular activities clustered around broad concepts, students can select their own unique problem-solving approaches and use them as springboards for the construction of new understandings (p. 47).

In her book concerning concept-based curriculum, Erickson (2001) describes the difference between topic centered and idea centered curriculum. She says it is the difference in

learning facts about the American Revolution and developing and sharing ideas related to the concepts of freedom and independence. It is the difference between the facts of the Alaskan oil spill and an understanding of the importance of environmental stability.

Erickson (2002) diagrams the structure of knowledge, duplicated in Figure 2.1.

Figure 2.1 Erickson's Structure of Knowledge



According to Erickson (2002), theory is a concept that has yet to be proven; principles are the cornerstone for conceptual understanding because they are always true and never change. Principles are balanced with generalizations which are generally true are qualified as "may," "often" or "can" be true. Erickson (2002) defines concepts as "mental constructs, an organizing idea that categorizes a variety of examples and says, "Although the examples may differ in context, they have common attributes" (p. 56). The author also argues that a conceptual structure for curricula is important because conceptual understanding requires content knowledge; however, the reverse is not true.

Erickson (2002) also contends that concepts are timeless, universal, abstract and broad. Concepts are timeless in that they will always be with us. For example, systems have always been with us, only the examples have changed. Concepts are universal in that they apply across cultures, and are as true in one nation as another. Concepts are abstract and broad in order to provide a variety of examples.

Erickson (2002) calls for a coherent curriculum that achieves the desired outcomes for students, based on, "the realities of living, learning and working in the 21st century, as well as the mandates of discipline-based standards and assessment" (p. 61).

Erickson (2002) also describes how critical central topics show the conceptual structure of the different curriculum. Once the concepts are identified, the broader themes can "be developed to allow integrated treatment of content where feasible" (p.61). She also contends that, "The goal is to teach students to think conceptually. This will occur in classrooms only if teachers identify and teach toward conceptual ideas" (p. 62).

Designing concept-based curriculum

When designing curriculum, the lack of a conceptual lens leaves curriculum at a lower cognitive multi-discipline level. A well-designed, integrated, interdisciplinary unit raises the thinking above base facts, enhances conceptual understanding and affords each discipline a depth and integrity on its own.

Erickson (2001) details 9 steps to curriculum design.

1. Decide on a unit theme that will allow all team members to enter the integration process.
2. Identify a major concept to serve as a suitable integrating lens for the study.
3. Web the topics for study, by subject of area, around the concept and theme.
4. Brainstorm some of the essential understandings (generalizations) that you would expect students to derive from the study.

5. Brainstorm "essential questions" to facilitate the students' study toward the essential understandings.
6. List processes (complex performances) and bullet key skills to be emphasized in unit instruction and activities.
7. For each week and discipline in the unit, write instructional activities to engage students with essential questions and processes. The instructional activities and questions should help students bridge to essential understandings.
8. Write the culminating performance to show the depth of learning. The culminating performance answers the question, "What do I want students to know and be able to do as a result of the integrated unit of study?"
9. Design the scoring guide (criteria and standard) to assess the performance task. Decide on additional types of assessments to measure progress throughout the unit. (p. 71 - 72)

Essential Understanding and Questions

Step 5 in Erickson's (2001) step for curriculum design involves the brainstorming of essential questions to facilitate the student's study toward the essential understandings. Wiggins and McTighe (1998) describe essential questions and understandings in their book *Understanding by Design*. To describe the connection between questions and understanding, they write,

> To get at matters of deep and enduring understanding, we need to use provocative and multi-layered questions that reveal richness and complexities of a subject. We refer to such questions as "essential" because they point to the key inquiries and the core ideas of a discipline (p.28).

In a classroom based on concepts, questioning plays a vital role in educing understanding. Since concepts are universal and timeless, the questioning can spiral through various disciplines and across years. Wiggins and McTighe (1998) refer to this notion by saying that questioning recurs vertically and horizontally.

Not all questions lead to conceptual understanding. Wiggins and McTighe (1998) characterize essential questions by saying, 1. they go to the heart of the discipline, 2. recur naturally throughout one's learning and in the history of the field and 3. raise other important questions .

Suphon and Wolf (1994) present five questioning techniques that foster higher order thinking. First, provide students with several seconds of wait time before answering. Second, ask open-ended questions that assist students in developing inquiry skills. Third, involve all students so a collaborative vision emerges. Fourth, allow students to converse with each other so they can share their own opinions. Finally, have students elaborate on their answers. Suphon and Wolf also argue that teachers should include higher order questioning everyday and during every lesson.

How does a teacher tie together the essential learning, questioning skills and concept-based curriculum? Brighton (2002) offers five ideas to remember when designing a curriculum. First, begin with the end in mind. Second, standards can be grouped together into meaningful units of study. Third, think of the standards as providing useful scaffolding for concepts. Fourth, test preparation can be differentiated based on the needs of the students. Fifth, the use of instructional techniques, such as compacting and independent study, should be based on data.

The Role of Discourse in Constructivist Classrooms

As referenced earlier, Windschitl (2002) identified the need for teachers to create classroom environments that encourage students to put forth and discuss ideas. Similarly, Brooks and Brooks (1993) argue that constructivist teachers seek and value students' points of view. Shapiro (2002) adds that the environment needs to be safe so everyone is comfortable sharing ideas knowing all contributions are valued. These researchers acknowledge the importance student discourse has in a constructivist classroom by saying that it must be planned. Tobin (1998) says,

> Scientific knowledge does not reside in the materials to be mysteriously released during hands-on activities. On the contrary, scientific knowledge needs to be co-constructed in interaction in which students and the teacher interact verbally using a shared language (p. 203).

Vygotsky (1978), as mentioned in Chapter 1, developed the notion of the zone of proximal development (ZPD). The ZPD describes the range between what a student can learn alone and what a student can learn when guided by a more knowledgeable peer. Vygotsky understood the sociocultural importance of learning and the power of shared understanding and meanings. Vygotsky's notion gives credence to the use and importance of discourse in a constructivist classroom.

Vygotsky's role of a more knowledgeable peer is mirrored by Driver, Asoko, Leach, Mortimer and Scott's (1994) notion of the role of the teacher in science education. They say that there are two important components in the role of the authority figure: introduce new ideas or tools and listen and diagnose ways the instructional activities are being interpreted to inform further action.

Driver et al. (1994) speak of the role of discourse in science education by saying,

> From this perspective, knowledge and understandings, including scientific understanding, are constructed when individuals engage socially in talk and activity about shared problems or tasks. Making meaning is thus a dialogic process involving persons-in-conversation, and learning is seen as the process by which individuals are introduced to a culture by members that are more skilled. (p. 7)

Driver et al. (1994) continue speaking of the role of discourse by saying, "A social perspective in learning in classrooms recognizes that an important way in which novices are introduced to a community of knowledge is through discourse in the context of relevant tasks" (p. 9).

Brooks and Brooks (1993) point out that teachers do a great deal of talking to get the information across, however, "listening is an equally important component in a constructivist classroom" (p 62). Listening provides the teacher with the opportunity to understand the students' points of view and their understanding of the concepts. Brooks and Brooks (1993) relate the story of a teacher who asked a question to which a student responded. The teacher asked the student if he was sure, to which the student changed his answer. The teacher asked again if the student were sure which caused the student to think about the question and what he knew, and the student changed his answer to his first response, which was the correct answer. Brooks and Brooks (1993) argue that students have been conditioned toward the correct answer, to which there is no follow up question. They wonder that if there is only one correct answer, "how can students be expected to develop either the interest in or the analytic skills necessary for more diverse modes of inquiry" (p.110)? The constructivist classroom probes a student's understanding of the material and will seek to have students explain their thought process. Schools must create the setting that fosters student dialogue. Brooks and Brooks (1993) also point out that allowing students to engage in dialogue is an empowering experience that facilitates meaning making. This thought is reflective of Von Glasersfeld (1998) when he writes,

> If we repeatedly tell children that their solutions to problems are wrong, we should not be surprised that their enthusiasm for tasks involving numbers dries up. If, instead, we ask children 'How did you go about getting that answer?' we discover that in many cases they are capable of seeing for themselves that something did go wrong. At that point, children become aware that it is they who are capable of constructing solutions to problems and that they themselves can decide whether something works or does not. This is the beginning of self-regulation, of a feeling of autonomy, and, as a result, the start of a potentially active learning process (p. 28).

Discourse refers to the talk that takes place in a classroom. The talk could be teacher to student, student to teacher or student to student. Orme and Monroe (2005) describe four types of discourse found in classrooms: exploratory is discussion without animosity, cumulative has agreements, elaborations and ideas are accepted, disputational identifies disagreements where a student's hypothesis is rejected, and tutorial identifies a relationship in which one student is taught by another. Of these four, Orme and Monroe (2005) posit that exploratory is the most educationally useful in that students are equal and there can exist an opposition of ideas, not individuals.

In order to facilitate this dialogue, teachers must have a through understanding of the subject matter. As Richardson (2003) says,

> Such knowledge helps teachers in the interpretation of how students understand the material, in developing activities that support students in exploring concepts, hypotheses and beliefs, in guiding a discussion toward a shared understanding, providing guidance on sources for additional formal knowledge, and, at times correcting misconceptions (p. 1628).

Driver and Bell (1986) also speak of the need for teachers to guide students in teaching science. They caution,

> By presenting science as a set of 'right answers', we may subvert students' attempts to grapple with problems themselves and to make new experiences meaning to them. They readily substitute external authority and rote learning for internal authority and understanding. (p. 452)

According to Gunstone (2000), Driver argues that the child's knowledge must be considered as much as the subject matter. Driver says that the knowledge constructed by students may or may not be those intended; thus, she says that meaning is influenced by our existing knowledge.

Professional Learning Community

Peter Senge, in his book, *The Fifth Displine* (2001), says that for organizations to endure they must become learning organizations. Schools embraced this theme by forming professional learning communities. It should be stated, that organizations in all ventures, not just education, instituted professional learning organizations.

A brief review of the history of American education shows how, during the early 1900's, the scientific management theories of Taylor were applied to schools (Callahan, 1964). The scientific management theory had as a goal to make organizations more efficient. This time also saw growth in factories, such as the automobile factory. America found hope and order in the factory model of Henry Ford. Schools then became viewed as factories, and, as such, developed into a top-down, one best system approach. What one school did could be done at other schools. There was no room to waver from the best system. Schools have operated in such a way until the present, with few exceptions. While schools have remained relatively unchanged since the 1930's, there has been change in industry and the functioning of organizations. As an example is the Total Quality Management approach embraced by Japanese companies and copied by American companies.

Enter Senge with his notion that for organizations to endure they must become learning organizations. Giles and Hargreaves (2006) say that professional learning communities are postmodern organizational forms struggling to survive in a modernistic, micromanaged and politicized educational world. Giles and Hargreaves also report that longitudinal studies of innovative schools point to three common forces behind their demise:

> Envy and anxiety among competing institutions in the surrounding system, the evolutionary process of aging and decline in the organization's life cycle, and the regressive effort of large scale, standardized reform strategies (p. 127).

There are many descriptors of a professional learning community; many of those descriptors are common among authors. Research offers five defining dimensions of professional learning communities. First, professional learning communities have a shared and supportive leadership in which school administrators participate democratically with teachers sharing power, authority and decision-making. Second, staff shares a vision for and value in school improvement that has a focus on student learning. Third, the staff's collective learning and application of that learning create high intellectual learning tasks and solutions to address student needs. Fourth, the school's condition and capacities support the professional learning community. Moreover, fifth, there is a shared personal practice in which peers review and give feedback on teacher instructional practices in order to increase individual and organizational capacity (Hipp, 2001: Kruse, S., Louis, K. & Bryke, A. 1994).

The term "organizational capacity" refers to the ability of the organization to solve problems and make decisions effectively, thus renewing the organization. An effective professional learning community is one in which teachers are empowered and decision-making is shared. This de-centralized approach to decision-making, increases the ownership teachers feel in the school, as well as makes leaders of teachers. It is a paradigm shift from a top-down approach of management to a grass-roots approach. This paradigm shift affects all aspects of schools, including staff development.

Staff development, in a centralized approach, has aimed at building teachers' theoretical knowledge. Staff development in a professional learning community takes on a new meaning since the focus is on improving student achievement. A focus on student results means that a professional learning community assigns a higher priority to building the collective capacity of the group than the knowledge and skills of individuals (Dufour & Eakers, 1998). These communities want teachers empowered and able to implement new strategies to address student

needs. Staff development for learning communities has to be action oriented because that is the focus of the learning community (Dufour & Eakers, 1998).

Staff development in a professional learning community also looks different from the traditional information sharing approach found in a centralized approach. In the learning communities, teachers learn from each other via coaching, mentoring and support groups. Coaching is a dialogue between teachers, in which feedback and support promotes sustained practice and fosters the acquisition of new knowledge and skills. While coaching is a more one-on-one approach, support groups offer a chance for several teachers to discuss their questions, concerns and ideas (Dufour & Eakers, 1998). Isaacson (2004) says that when teachers see themselves as leaders, they become the core support group that will maintain the philosophical foundation.

The Tri-Partite Theory of Organizational Change and Succession

Wilson, Byar, Shapiro and Schell (1969) developed the Tri-Partite Theory of Organizational Change and Succession, which is treated in the book, *Curriculum and Schooling: A Practitioner's Guide* (Shapiro, Benjamin & Hunt, 1995). The theory describes organizations as having one of three orientations, person, plan or position. The theory continues to describe the successive, rotational pattern that organizations follow. If an organization understands the Tri-Partite Theory of Organizational Change and Succession, change can be managed and pitfalls avoided.

A person-oriented organization is led by a person who is attractive to the organization's members. The leader is charismatic, has new ideas, visions and goals. Members of the organization are drawn to the new ideas and the new leader. The members are loyal to this person; thus the person-oriented organization. This leader is seen to run the organization single-handed.

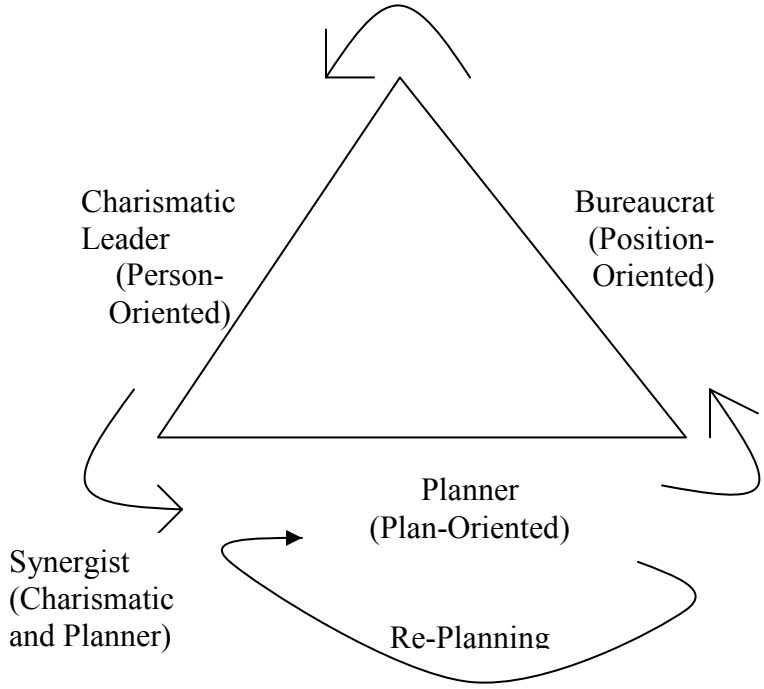
After the charismatic leader is gone, the members of the organization attempt to perpetuate the leader's ideas and goals. The members create plans that are goal oriented and logical. This describes the plan-oriented organization. Though there is planning in each of the three orientations, it is the nature of the plans that set this orientation apart from the other orientations. The leader for a plan-oriented organization is a person who is capable of creating plans that will move the organization forward and has the ability to implement plans.

There are some leaders who are both charismatic and can plan. These rare individuals are considered synergists, because they combine two leadership styles. A synergist has considerable leverage to effect change.

After an organization has established plans, divisions of labor multiply to implement the institutional plans. The organization develops rules to accomplish the goals, follows ritual and becomes less flexible. This description characterizes a position-oriented organization. The position-oriented organization is run by a hierarchy, creating red tape, in which the position is more important than the idea. The expectancies of the position become oppressive to those subject to the position. Idea-oriented members will leave the organization thus adding to the organization's stasis. The leader of a position-oriented organization tends to be bureaucratic: focused on managerial functions and wants to maintain the organization's status quo.

The Tri-partite Theory of Organization Change and Succession argues that organizations move in a predictable, routine succession from one orientation to the next. This theory is represented in Figure 2.2. The key is for an organization to remain vital is to re-plan and manage change, avoiding the bureaucratic phase.

Figure 2.2 Tri-partite Theory of Organizational Change and Succession



Summary of Chapter

Recognizing that there are several categories of constructivism, this proposal examines constructivist pedagogy. This chapter began with a review of literature pertaining to constructivism and the viability of constructivist pedagogy in a world of standards. Reference was made to Windschitl (2002) who presents four needs for standards: they present a practical value, students will find the knowledge useful, they represent the norms of a subject matter, and finally, without these basic norms, students will not be able to participate in the development of new knowledge.

The concept of constructivist pedagogy as described by various researchers and writers was explored. Part of the review of constructivist pedagogy addressed the description of a constructivist lesson. Constructivist pedagogy was described as a community in a meta-level dialogue about big concepts, in which teachers challenge student suppositions and assess learning

in the context of daily activities. Constructivist lessons are built on students' prior knowledge, centered on a clear concept, with the opportunity for students to use the new knowledge, all in an environment, which encourages student dialogue.

The review of literature also examined the role assessments play in a constructivist classroom. The literature showed a need for the assessments to be continuous and authentic. This ties in seamlessly with the role of a teacher in a constructivist classroom. Literature describes the teacher as a guide and a facilitator. In order to guide the students properly, the teacher must know constantly the students' understanding of the material.

The chapter then described concept-based curriculum and the process of designing a concept-based lesson. This section relied on the book by Erickson (2001; 2002) dealing with concept-based curriculum. Her figure of the structure of knowledge was shared which shows the relationship of facts to concepts to generalizations. Designing curriculum around larger concepts presents material in a cohesive fashion in which students can make connections between subjects.

A review of literature was conducted related to the role and use of discourse in a constructivist classroom. Brooks and Brooks (1993) share the importance of discourse by saying that it allows the teacher to understand the students' points of view and their understanding of concepts.

The review of literature also examined two notions that play an important role in the study of Southwood Elementary School, those being the professional learning community and the Tri-Partite Theory of Organization Change and Succession. As described in Chapter 1, Isaacson established the professional learning community model at Southwood Elementary School to serve as a basis for professional development and to maintain the constructivist philosophy. The professional learning community also plays a key role in avoiding the pitfalls described by the Tri-Partite theory.

The various aspects of constructivist pedagogy explored in this review of literature will assist in the data-gathering phase of this dissertation process. Chapter 3 describes the methodology employed the visits to Southwood Elementary School, including a description of the classroom observation tool. Chapter 3 also examines Southwood as described by Isaacson in her dissertation.

Chapter 4 offers the detail of the data collected, including common themes and concepts from interviews. Chapter 4 also details the classroom observations.

Chapter 5 reflects on the data gathered, in light of the review of literature presented in this chapter. The research questions are answered, implications discussed and recommendations for future research are made.

Chapter 3

Method

The review of literature outlined in Chapter 2 highlighted a variety of pedagogical issues regarding a constructivist approach and concept based curriculum design. It should be reiterated, that constructivism is primarily an epistemological approach that has been applied to educational settings. We must remember that constructivism is a theory of learning and not a theory of teaching (Richardson, 2003). The review of literature helps to establish a knowledge base for use in this research project. A review of the research problem, purpose and questions are in order.

Restatement of the Problem

The Tri-Partite Theory of Organizational Theory of Organizational Entropy, suggests that organizations lose their effectiveness so gradually that its members do not recognize the loss of effectiveness. Therefore, investigation of Southwood to determine if the constructivist philosophy, as Isaacson defined it, had developed and endured since the school experienced a change in principals. Isaacson also recommended a study regarding the endurance and maintenance of the constructivist instructional approach at Southwood, which involves replanning.

Restatement of the Purpose of the Study

The purpose of this study was to gather teacher perceptions regarding the maintenance of the constructivist philosophy at Southwood Elementary School. Additionally, this study sought to determine the level of constructivist strategies used in various classrooms. This purpose answers Isaacson's call for future research to determine how the constructivist philosophical approach is being maintained. A second purpose of this study is to examine how the school managed the transition to a new principal, in light of the Tri-Partite Theory of Organizational Change and Succession.

Restatement of the Research Questions

Answers were sought to three questions related to the educational model employed at Southwood Elementary School.

1. Is the faculty still using a constructivist educational approach, as determined by the Constructivist Teaching Inventory?

2. What are teacher perceptions regarding how they are being maintained in their practice of constructivist philosophy?

3. Is there congruence between what research defines as constructivist education, teachers' understanding of constructivist education, and classroom practice?

Method

To answer the proposed research questions, an observational case study method was employed. Bogdan and Bilken (2003) describe an observational case study as a detailed examination that encompasses participant observation supplemented by formal and informal interviews with the focus on a particular organization. They go on to say that in a qualitative research project, the researcher examines a piece of the whole organization, without losing sight of the relationship of the piece to the whole. Detaching a piece to study distorts, but the researcher attempts to choose a piece that is a naturally existing unit. This research study sought to understand and to describe teachers' perceptions, but was not interested in quantifying these perceptions. Janesick (2000) says, "that the qualitative researcher studies a social setting to understand the meaning of participants' lives in the participants' own terms" (p. 382). Moustakas (1994) refers to this method when he says,"… (it is) a return to experience in order to obtain comprehensive descriptions that provide the basis for a reflective structural analysis that portrays the essence of the experience" (p. 13).

Data was gathered from three main sources: principal interview, teacher interviews and classroom observations. The three data sources offer different glimpses of the constructivist

model at Southwood Elementary School. Using the three various data sources, validity was added to this study by basing inferences on more than one perspective.

An interview format captured teachers' perceptions of the use and maintenance of the constructivist approach at Southwood. The interview transcripts are found in the appendices. Common themes and concepts were identified in the interviews. A qualified outside researcher validated the identified themes and concepts. The outside researcher is a fellow doctoral candidate who has worked as an assistant principal in the elementary setting for six years. In order to answer research question 3, related to congruence between literature, teacher perceptions and classroom application, classrooms were observed using the Classroom Teaching Inventory.

Southwood Elementary School

Southwood Elementary was built in 1997 with Dr. Isaacson being named as the founding principal. Beginning in 1999, Dr. Isaacson asked Dr. Shapiro as a consultant to facilitate moving the school toward constructivism using a constructivist philosophy as a change strategy to implement a change at Southwood. They implemented the constructivist philosophy as a curriculum model. A representative planning committee identified various teacher issues and concerns during this change process. The committee then summarized the issues and concerns and looked for underlying themes. The next step was for the committee and the consultant to create potential lines of action to deal with the issues and themes. After reviewing underlying rationalities, a number of lines of action were undertaken, including decentralizing into small teams, establishing direct communication, developing a common purpose to move toward constructivist practices, among others. Isaacson conducted a follow-up three years later with the help of Shapiro and again identified teacher concerns. Isaacson and Shapiro (2004) compared the two sets of concerns, and concluded that it appears they examined two different schools because the change was so dramatic. Southwood Elementary School serves approximately 900 students, 47% receiving Free or Reduced lunch and 69% of the students are minority. The students also

represent a diverse background as 54 different languages are spoken by the students. Of importance in this study was the development over time that teachers want to ensure that new teachers have a strong support system. Equally, the faculty felt it is important for the new teachers to develop a clear constructivist philosophy. Teachers recognized that they had to understand the concept and that problem solving and decision-making were essential underpinnings. Isaacson (2004) underscores the importance of a philosophical and practical maintenance strategy to re-plan, which is necessary.

The State of Florida engages in a practice of grading schools based on results of the statewide assessment, the Florida Comprehensive Achievement Test (FCAT). The grading results for the past seven years for Southwood Elementary School are found in Table 3.1. In order to understand the results in Table 1, the system the State of Florida uses to grade schools should be described.

The FCAT has three major sections that are assessed, Reading, Writing and Mathematics. These areas are measured against State standards. Scores are reported two ways, first as a developmental scale score and second as a level score, with levels ranging from a low of 1 to the highest 5, and level 3 indicating the proficient level. Schools receive grades based on the total number of points in six areas. Those areas are: the percent of students scoring level 3 or above in reading and mathematics; the percent of students scoring a 3.5 on the Writing section (scoring rubric ranges from a low of 1.0 to a high of 6.0); the percent of students below proficiency who make year over year growth in reading and mathematics; and finally the percent of students in the lowest quartile making year over year growth in reading. It should be noted that year over year growth is based on gains in the developmental scale score and varies by grade level.

Table 3.1 History of Southwood's Grades

Year	School Grade
1999	C

2000	C
2001	B
2002	A
2003	A
2004	A
2005	A
2006	A

The results in Table 1 show the history of Southwood's grades, during which the implementation of constructivist philosophy began. This chart is not presented as evidence of the effectiveness of a constructivist approach. Other variables, such as demographic changes, could have influenced the test scores as well. Table 3.1 is presented only to show the historical school grades. An examination of other elementary school in the same county at Southwood Elementary School shows similar results. Orange County (where Southwood Elementary School is located) operates 111 elementary schools. A survey of those schools reveals that 22 received a State grade of an "A" for the past five years, with Southwood being one of them. Additionally, nine schools received six "A's" in a row, seven schools have earned an "A" for seven straight years and three schools have maintained an "A" for the eight years that Florida has graded schools (School Grades, 2006).

Of interest is another Orange County elementary school (referred to here as JYES) that has maintained a school grade of an "A" for five consecutive years, like Southwood Elementary School. JYES and Southwood have similar populations with 47% of students receiving free or reduced lunch (an indicator of economic status). In addition, 75% of students at JYES are minority, while 70% of Southwood Elementary School students are minority.

The comparisons of Southwood Elementary School to other schools in its surrounding county is made to reinforce the notion that this research study does not make the assertion that constructivism is the only or the best educational strategy. This study is concerned with how constructivism is understood, applied and maintained at Southwood Elementary School, in light of the departure of the founding principal.

Chapter 1 describes the process Isaacson (2004) used to develop a constructivist approach at Southwood, using constructivist strategies as a change model. Her dissertation details teacher perceptions of the use of the constructivist philosophy as a change model. Teachers were asked to write responses to a series of questions and partake in focus group interviews. Isaacson identified common themes and indicators of those themes from teacher responses. Those common themes and indicators follow.

CP. Constructivist Philosophy	Use of the vision, higher-order thinking, thinking "outside the box", non-scripted curriculum.
CP.1 Understanding the Concept	Thinking about thinking; metacognitive skills, probing to think on my own; figure things out; not given an answer, but justify my solution, find the problem, explain; constructing our own knowledge.
CP.2 Problem-Solving – Decision-making	Questions, find ways to make it better, Principal asked what I want to do, thin k first, plan, answers not given.

CP.3 Reflective Practice	Discuss what happened, explain why, do it better next time, examine pre-requisite skills. Dig deeper, look back-and then look forward.
CP.4 Risk-free environment	Try it out, experiment, if it doesn't work, try again, work it out, and think creatively.
CP.5 Learner-Centered	How children learn, think of the kids first, observe listen, watch, and provide opportunities, life long learning, creative approach, kids can explain their thinking; create a rule.
C. Change	Movement, disruption, anticipation of something being different than before.
C.1 Evaluation of Curriculum	Understanding-math, integrated units, any subject area that changes as it is learned, finding better ways to instruct- Resistance/excitement, adding on/substituting new strategies.
C.2 Change of models	Vertical team concept-resistance/excitement; looping concept-resistance/excitement
C.3 Change of teams	Disruptions when someone leaves/joins the team, teachers choosing to move seen as negative/positive experience.
P. Perception	Believing, perspective. Statements relating to job satisfaction. Describing incidences that occurred. Statement often overlapped with Affect.

L. Leadership	Focus on the principal – negative/positive experiences
L.1 Support of teachers	Feel supported, provided with ideas, suggestions, help with students, help with parents, not threatened by interaction, empowers u, trust us to make decisions.
L.2 Feeling appreciated	Spends time making teachers feel appreciated, recognized-publicly and in private, complimentary.
L.3 Provides a professional work environment	Provides materials and supplies because teacher need them, values input into what teachers want, provided time to work with teammates, feel comfortable, safe.
TL. Teachers as Leaders	The assumption by the researcher was that all items identified, relating to the team building, belong in this section. If someone initiates a group getting together or organizes a group project, then a leader is recognized.
TL.1 Collaboration	Collaborating, getting together as a group, planning together, working together.
TL.2 Trust building and forming relationships	Like my team, like working with my pod members, work well together, get along, know value of communication, become a team.
TL.3 Asked for help and received it	Willing to ask for help, teachers help me
TL.4 Value of personality styles	Understand each other, understand myself

and use of Gregoric	easier to work with people, laugh
TL.5 Value of Positive Attitude	
FISH philosophy	FISH helped me, attitude, and play, make their day, importance of positive attitude
TL.6 Took on leadership role	Leadership, mentor and committee work/chair
A. Affect	Feeling words: happy, love, excited, school as a family

Interviews

For this case study, visits to Southwood Elementary School were made during the Spring of 2006. During the visits, the principal was interviewed along with 12 teachers using the interview guides attached to this dissertation as Appendices A and B, for the administrator and teachers respectively. In addition to the principal, twelve teachers were interviewed, two from each grade level K-5. Confidentiality was maintained by making the interviews anonymous by marking notes with a code to designate the grade level of the teacher. Participation was strictly voluntary.

Bogdan and Biklen (2002) offer the use of purposeful sampling, in lieu of random sampling. Purposeful sampling involves the inclusion of certain people, or groups of people, whose experiences expand the developing research. Because this study sought to understand the maintenance and perceptions of said maintenance of the constructivist philosophy at Southwood, teachers with various years experience at Southwood were included. In discussion with the principal prior to the visits to Southwood, the principal expressed concerns about how teachers were chosen for the study, because some teachers were not returning to Southwood next year. The principal feared that these teachers might misinterpret their inclusion in the study. To avoid this possibility, the principal was asked to identify two teachers from each grade level and include a sample of various experience teaching at Southwood. As mentioned in Chapter 1, the

principal's selection of teachers included in the sample could have certainly skewed the results. However, the focus of this study sought input from teachers with varying years' experience at Southwood Elementary School, and the principal's selections met those requirements. More detailed information about the teachers will be addressed in Chapter 4.

Administrator Interview

During the interview with the administration, this study sought to collect information pertaining to the educational focus of the school, how new teachers are selected and educated to function with in the school. Information was also gathered pertaining to the maintenance of the constructivist philosophy within the school community.

Teacher Interviews

The interviews and observations of teachers were aimed to generate much data. As mentioned earlier, participation was voluntary, and with permission from the teachers, the interviews were taped for transcription and reference. Teacher privacy was observed and the teachers will only be identified by a code. For example, a second grade teacher was coded as "2A" while another second grade teacher was coded "2B." The interviews obtained categorical information, such as years of experience and years at Southwood. The interview explored: their definition of constructivism, what education they have had in the constructivist approach, the implementation of constructivism in the classroom, teacher and student role in the classroom, the role of dialogue in the classroom, group interaction and student discourse.. The interview questions in Appendix B served as a format for the interview.

Classroom Observations

Each teacher interviewed also agreed to a set of three classroom observations, each observation separated by one week. Recall that one of the questions of this study is to determine if there is, congruence between what literature says is constructivist education, what teachers say is constructivist education and what actually takes place in the classroom.

Instrumentation

For classroom observation, the study employed the use of the Constructivist Teaching Inventory (CTI) developed in 1999 by Margaret Greer as part of her doctoral dissertation (Greer, Hudson & Wiersma, 1999). The instrument was used only as a rubric and the results were not intended to be quantified for statistical tests.

The Constructivist Teaching Inventory

Greer (1997) combed educational research to identify classroom practices that could be considered constructivist strategies. This instrument is used to identify classroom practices on a continuum towards constructivist practices. She categorized the practices into four main groups, which comprise the four subscales of the inventory. The CTI has four subscales of 11 items each, a total of 44 items. The subscales, with brief descriptions are:

Community of Learners Scale focuses on the verbal interactions within the classroom community,

Teaching Strategies Scale focuses on the teacher as instructional strategist and decision maker,

Learning Activities Scale focuses on what the teacher has students do to be intellectually active, and

Curriculum Assessment Scale focuses on the area of curriculum and assessment.

Each strategy within the scales runs on a continuum of application. For example, if a constructivist strategy allows for all members of the class to ask questions, then the opposite extreme would be that only one person (the teacher) asks the questions. On this continuum from only the teacher asks questions to every member in the class asks questions Greer created descriptors to use as a guide in marking the observed strategies. Each item is scored on a 7-point scale (0-6). Descriptions are provided for points 1, 3 and 5. The range of scores for each subscale

is 0-66, and the range for the total inventory is 0-264. The higher the score the more constructivist teaching behaviors are observed.

Once the Constructivist Teaching Inventory was developed, Greer sent it to five professors who are familiar with constructivist practices. They reviewed the scales and the descriptors. Based on their feedback, six items were reworded. The instrument used in the present study is the finished product of Greer research.

Validity

The CTI was developed using literature and adaptation of previous classroom observation instruments, namely Burry-Stock's Science Classroom Observation Rubric (1995) and the Guide to Rating Instructional Conversations (Rueda, R., Goldenberg, C.& Gallimore, R. 1992). The validity (.95) was expected to be high due to the development process. To address the issue of validity further, the developer had a panel of five experts review 45 items. The experts rated 37 of the items as strongly relevant. The inventory developer rewrote seven of the items based on recommendations of the experts.

Reliability

Internal consistency was estimated by computing Cronbach's alpha coefficient across content and grade level taught for the total scale and the four subscales. The Cronbach's alpha coefficient for both was .99, indicating a high reliability for measuring the use of constructivist teaching practices.

Data Analysis Procedures

Following its collection, this researcher analyzed the data. The focus was to identify common ideas, themes and/or patterns that emerged in the participant interviews. The following steps comprised the data analysis procedure:

Step 1: The interview tapes were transcribed.

Step 2: The transcripts of the interviews were sent to the teachers interviewed who checked for accuracy, reporting any misrepresentation or inaccuracies. The teacher review of the transcripts serves as member check verification.

Step 3: After making any changes noted by teachers, I read the transcripts noting key words, ideas and themes.

Step 4: A second set of transcripts was given to another researcher as a validation process, with directions to identify ideas and themes. The outside researcher is a fellow doctoral candidate with six years of experience as an assistant principal at an elementary school.

Step 5: Ideas and themes from the analysis of the primary researcher and those of the second researcher were compared. We discussed any discrepancies concerning common themes. Interestingly, the primary and outside researcher identified the same key terms, concepts and four themes. The outside research did comment that, by reading the interviews, he got the impression that all students had to participate in groups, whether they wanted to or not. However, classroom observations did not support his perception, as some students chose to work independently.

Step 6: The answers to each question was individually review and a list of key words or concepts was made. Check marks were made next to key words or concepts that were repeated by multiple teachers. The emergent ideas, themes and patterns are being communicated though this dissertation. The detail of data relative to the interviews, which is communicated in Chapter 4, is made from the list and check marks.

Step 7: In addition to the analysis of the interview transcripts, a comparison was made between a teachers' perceptions and the scores on the CTI. Teachers' transcripts were examined and compared it to the scores on the CTI. The CTI was used as an independent observation tool, to aid in the comparison between teacher's perceptions of their implementation of constructivist strategies and the strategies observed in the classroom.

The data analysis procedures described address the issue of validity of the findings. First, data was gathered from three main sources, literature, interviews and classroom observations. The three sources of information provide for a higher level of validity because the findings are not based on one source. Second, a qualified outside researcher reviewed the transcripts. He worked independent from the primary researcher and identified the same common themes as the primary researcher. The use of an outside researcher also adds to the validity of the findings. As mentioned earlier, the primary and outside researcher identified the same key concepts and common themes. The only point of difference was the perception that students had to work in groups, whether they wanted to or not. The outside research only had the interviews on which to base his perception. However, classroom observations did not support his perception, as the primary researcher observed students choosing to work independently.

Summary of Chapter

In this Chapter, the problem, purpose and research questions were restated. After offering definitions for an observational case study, Southwood Elementary was described as it is known today, offering FCAT results for the past seven years. The interview and observation processes were described and used to answer the research questions. To aid in the observation process the Constructivist Teaching Inventory was used and have offered validity and reliability information for that instrument. Finally, the chapter detailed a set of procedures followed in the data analysis phase of the research.

Chapter 4 will detail the data gathered via the interviews and the classroom observations, which were scored using the CTI as a rubric.

Chapter 5 will take a closer look at some of the data, discussing themes and concepts identified by the researcher. Summary of the finding, implications of this study and recommendations for future research are also found in Chapter 5.

Chapter 4

Results

Chapters 1 and 2 define constructivism, review literature related to the educational application of a constructivist philosophy, describes Southwood Elementary School whose teachers reportedly implement a constructivist philosophy in instruction and, finally, establishes questions for a research study. The method employed to gather the data is described in Chapter 3. The present chapter reports the data gathered though the study: first the interviews of teachers and principal, then the classroom observations.

Teacher Interviews

The following section details the data gathered from the teacher interviews. The transcripts of the interviews are attached to this dissertation as Appendix B. The interviews were conducted during the first and second visits to Southwood Elementary School.

The principal researcher identified key words and concepts in the interviews. The transcripts were given to a qualified outside researcher who was asked to identify common themes and concepts. The key words and concepts identified by the researchers follow.

Definition of constructivism?

All teachers were asked for their definition of constructivism. There were three key concepts that five teachers offered as a definition: 1) students construct their own learning, 2) building on prior experience, and 3) activating higher-order thinking through questioning. Four teachers mentioned the importance of making connections. Three teachers defined constructivism as employing both active learning and problem solving approaches. Two teachers defined constructivism as developing a sense of curiosity, learning through discovery, learning through real-world situations and making students the center of learning. Other definitions offered by at least one teacher are: activities are based on student interest, giving students the tools to learn, making students own their understanding, making meaning, active learning and the importance to

formulate projects. The definition of Teacher K2 summarizes many of these concepts as she says, "I think constructivism is a hands-on approach. The kids construct their learning through their own experiences. They build on their prior experiences. The teacher is just a facilitator in that. You set up your activities so the kids can gain their own experience from it. You set up activities based on their interests and what they are interested in learning about. They gather something from that activity that benefits them or is meaningful to them."

What specific training have you had in constructivism?

Teachers were asked to relate what training they had specific to constructivism. Five teachers responded that their training was limited to what they had learned while at Southwood Elementary School. Four teachers said that through their university studies they had some exposure to constructivism. Two teachers said they had no training or some training in their internship program. At least one teacher indicated that their training came via their own study, or networking with fellow teachers.

When Southwood Elementary School began implementing the constructivist philosophy six years ago, Isaacson conducted intensive staff training. As described in Chapter 1, Isaacson focused training on the application of instructional strategies. All teachers on the staff of Southwood Elementary School at that time were involved in the training. Some of the teachers involved in this research's interview process were part of those staff trainings conducted by Isaacson.

One teacher obtained her Bachelor's of Arts degree from Elon College in North Carolina. According to the teacher, the College of Education at Elon espouses constructivism.

How is constructivism maintained at Southwood?

Teachers felt supported in their roles as teachers in a constructivist school, and felt that the constructivist philosophy is being maintained. Six teachers agreed that the constructivist philosophy is maintained primarily through the school structure, resources and curriculum used.

Also helping to maintain the philosophy is the Breakfast Club, mentor program and interview process, which three teachers agreed to. Breakfast Club is the support offered to new teachers, which meet every Friday morning for coffee and donuts, where they discuss classroom issues, upcoming events, management issues, etc. Two teachers each agreed that the philosophy is supported by the principal and their teams, a group of grade level teachers. Also noted, by at least one teacher, as supporting constructivism are shared journal articles, special training, coaching by peer teachers and ownership of the philosophy by the teachers. Teacher 2A reflects, "It (sic) is maintained here because the teachers that stay here believe in what we are doing, have the same philosophy and are really learners themselves. Our new principal (who is also trained under Dr. Isaacson) she keeps this very much alive but it is not her torch, it is ours and part of what we all believe so it is easily maintained."

Several of the answers to one question also cross over and answer another question, and are not easily categorized as separate answers. For example, teachers felt the interview process itself helps maintain the constructivist philosophy because the principal is particular about who she wants to hire, if the applicant's background lends itself the constructivist style of teaching. The principal also shares journal articles she reads with the staff. The coaching that happens is also part of the mentoring program, team help and Breakfast Club. These noted examples are shared only to show the "mesh" of support reported by teachers.

What is the greatest challenge in a constructivist classroom?

The responses obtained when teachers were asked, "what the greatest challenge is in a constructivist classroom" were varied. The need to teach standards and the challenge of standardized testing was offered by four teachers. Parents lack of understanding the instructional approach is each offered by three teachers, as is not having enough time. Offered by one teacher as another challenge along the lines of standardized testing, is the need to heed to benchmarks. At least one teacher also offered as challenges: management style (being able to let go and let the

kids take ownership), getting students to grasp the concept of questioning. Of interest is another challenge noted by one teacher, which is other teachers who do not quite understand the philosophy of constructivism, and thus are not as supportive as desired.

What is your role in the classroom?

Almost every teacher, 9 out of 12, agreed that their role in the classroom is that of facilitator. Similarly, five teachers offered their role as guide and four others offered the role of questioner. Other roles offered by one teacher were: leader, observer, cheerleader and model. Teacher 2B offers an interesting reflection of her role as she says, "My role is to be kind of a guide. A guide of learning. Obviously, I need to organize things and plan things in a sequence that would make sense, but I do not always know where the unit is going to go because (I of course have a plan in mind but) as I am guiding the kids in knowledge, things kind of go along whatever path they take based on what the kids already know. I have a goal for where I want to get them but that might mean going from point A to point Z to point B, it just depends."

What is the students' role in the classroom?

Similar to the previous question, teachers were asked what they perceive as the students' role in the classroom. Many different roles were offered by teachers. Five teachers each offered that students set up the lesson by showing interest in a topic and they had to be active learners. Four teachers agreed that students had to ask questions, three teachers said students had to be thinkers and two teachers each said that students had to be the initiator and explorer of topics. Other roles offered by the teachers were: students had to be risk takers, participants in discussions, understand that there is not always a correct answer, students have to be teachers, and they have to verbalize what they understand. One teacher offered that students had to come up with ideas because "who knows best (sic) what 8 year olds like than an 8 year old."

Do students work in groups?

Teachers were asked if their students work in groups, and if so how the groups were determined. The answers were unanimous, in that all teachers utilized groups. Teachers described the group work as small group. Groups are formed, sometimes by level, other times by interest and other times by student choice.

How often is direct instruction used in your classroom?

Direct instruction is defined as the direct teaching of a subject, predominantly through lecture. Teachers were asked how often and in what situation they practice direct instruction. Eight teachers responded that they use direct instruction as a type of mini-lesson at the start of a new concept. These mini-lessons were conducted in whole group settings. Two teachers said they use the mini-lesson in small group settings. Other practices of direct instruction, offered by at least one teacher, are: it is used to fill gaps, used as a base for higher order questioning, sometimes it is subject specific need and finally that direct instruction is based on assessments.

Themes

The review of the key words and ideas taken from all questions yields four main themes that run consistently through the answers in the various questioned areas. Those themes are: questioning, learning is student centered, active learning and social influence.

Questioning

The theme of questions, the role and importance of questioning, is evident through many of the key words and ideas expressed in the interviews. When asked for their definition of constructivism teachers offered the concepts of curiosity, higher-order thinking skills and problem solving. Though the actual term "questioning" was not used, the words and ideas are certainly synonyms of the term "questioning." Likewise, when teachers were asked about specific training they had on constructivism one teacher replied that her training was limited to her own study. Her curiosity, her questioning, motivated her to study on her own.

Questioning even plays a part in the maintenance of the constructivist philosophy at Southwood Elementary School. Three teachers agreed that the interview process to hire new teachers helps to maintain and preserve the constructivist philosophy. By asking the correct questions, the principal can find applicants who will employ the constructivist strategies in the classroom.

A teacher even commented that the role of questioning is her biggest challenge in the classroom. It is a challenge to get students to understand the concept of questioning. Yet, when asked about the role of students, teachers identified terms such as questioners, thinkers, and teacher 4B even commented that students need, "…to be comfortable with the fact that there is not always a right answer and sometimes it is going to take you a while to get the answer and also be comfortable with the fact that some kids might get to an answer differently than others do."

Questions also play a role in the placement and use of direct instruction. Teachers comment that direct instruction is used to fill gaps, to build for higher order thinking and is based on assessments. If gaps exist in student learning, the student has questions about the subsequent information. For example, if a student does not understand the common denominator, it will be difficult to teach the student how to add fractions. They will have questions when they have to use the information. Teachers' use of assessments can point out gaps in learning which will warrant direct instruction.

Student Centered Learning

Like questioning, the notion that students are the center of learning is an overarching theme evident in the interviews. The term student here applies to the teachers as it relates to their own training and professional development. The teachers' definitions of constructivism offers many key words and ideas that are, or could be clustered as, student centered. Some examples of these definition key words and ideas are: students construct their own learning, activities based on

their own interest, their own understanding, prior experiences, making connections with prior knowledge and even, students are the center of learning.

Teachers are students of their own learning, and the notion of student centered learning is evident even in their learning. When teachers talk about peers and networking as key to the maintenance of the constructivist philosophy, they also speak of their role and interest in learning. Likewise are the teachers who involve themselves in the study and support groups. These are self-chosen, voluntary, groups. A few teachers said that the constructivist philosophy is maintained because the teachers have ownership of the school. Even as teachers speak of their role in the classroom, their responses reflect a student centered approach, as they describe themselves as facilitators (helping students), guides (guiding students) and cheerleaders for students.

As teachers describe the role of students in the classroom, the theme of student centered learning is prominent. Teachers describe students as the innovators, thinkers, and explorers. Teachers say that students set up the lesson based on their own interest. Students also are participants in discussions, bringing their own questions and curiosity to the table. Even as teachers describe group work, some teachers offer that groups are chosen by student choice, student interest or student academic level. Direct instruction is even used to address individual gaps in learning or done in small groups if there is a shared misunderstanding.

Active Learning

Teacher responses also identified the notion of active learning as a theme. Active learning describes the process in which students learn through an active process, such as experimentation, exploration or manipulation, as opposed to passive learning, which is learning through lecture or a book.

In their definitions of constructivism, teachers offered the following key words or ideas that promote the theme of active learning: students construct their own learning, hands-on approach, gives them tools, discovery way of teaching, problem solving, active learning, and

formulate projects. Teachers continue this theme as they describe the role students play in the classroom. Teachers describe students as risk takers, active learners, participants in discussions, questioners and thinkers. Teacher 5A offers the following salient quote related to this question, "My students are really teachers. I am obviously the one teaching the big idea but to some extent they are responsible for processing that information and putting it in their mind in a way that they will remember."

Like the theme of student centered learning, teachers become active learners as it relates to their own professional development and the maintenance of the constructivist philosophy. Teachers participate in the breakfast club, which is an opportunity for teachers to work with other teachers to discuss various topics. Teachers are also members of grade level teams. For teams to be effective, teachers must be active in the team meetings and discussions. Teachers also mentioned that the principal hands out articles for the teachers. It is up to the teachers to read the articles. Finally, teachers also mention that they have ownership of the school philosophy. Even as teachers describe their role in the classroom, the use terms such as facilitators, guides and models. All these terms suggest that students are active and thus need help, guidance and will follow the teachers model.

Social Influence on Learning

The final theme that is evident in the teacher interview is that of the social aspect of learning. This theme addresses the role of others in the processing of knowledge, which is learning. The social aspect of learning is evident even in teacher's professional development and the maintenance of the constructivist philosophy. As described earlier, teachers participate in the breakfast club, support groups, teams, coaching and networking with other peers. All of these maintenance structures involve teachers learning and interacting in a social context. One teacher even said she learned about constructivism from fellow teachers.

As one teacher spoke of the noise involved with student discourse as a challenge, the fact that students are talking to each other points to social interaction. All teachers spoke of the extensive use of groups, and spoke of the notion of students as participants in discussions. Direct instruction is conducted in both large and small groups, which reflect the zone of proximal development (students learn more through interaction with a more knowledgeable peer, as adults do).

The Principal Interview

The principal was asked how she perceived her role as principal of Southwood. Her response mirrored that of teachers by saying that she is a facilitator and lead teacher. She said that her role was to get teachers to accept that they, too, are leaders.

When asked about what she looks for during interviews for new teachers, she responded that she looks for teachers trained in guided reading (an approach through which teachers coach students to become independent readers, by teaching reading strategies). The principal said she listens for key words or phrases, such as hands-on experiences, facilitator, cool teacher, creativity and risk-taker.

When new teachers are hired, or transfer in, they are placed in a beginning teacher program, which is coordinated by the principal, literacy coach and the curriculum resource teacher. She says there is a fine line between what they see needs to be done and what the new teacher wants to know. The principal says, "...it is not my role to tell you how to do something. My role is to help you see what needs to be done and help you design the best way for you to get it done." This approach applies to the training that takes place for teachers. For example, she will take the issue of benchmarks, tell the teachers "this is what needs to be taught" and ask the teachers the best way to teach it.

To support and maintain the constructivist approach, the principal provides two pull out days per year per team so teachers can work together to focus on areas of need. Also supporting

the constructivist philosophy is the professional development program through which teachers are charged with looking at areas of growth, and grouping teachers together who have similar needs. The principal says, "The new teachers will tell you, I hope, that they feel supported yet challenged. That is always a fine line because a brand new teacher wants to know 'What do I do?' and how do you want it done?" She relies on classroom observations to monitor the instruction approach.

The principal also stressed that the school does use textbooks, and they are utilized as a resource. She mentions that not every child can learn from a textbook, and the need is to use the children's strengths to help them learn.

Classroom Observation Summary

The classrooms of twelve teachers were observed. These were the same teachers interviewed for this study. The observations were made on April 17, April 24 and May 1 of 2006. Each observation was recorded using the Constructivist Teaching Inventory (CTI) and lasted 10-15 minutes (as called for in the use of the CTI). The CTI has four sections for scoring: community of learners, teaching strategies, learning strategies and curriculum and assessment. Each section has eleven identifiers scored on a seven point likert-type scale, 0-6. Each section has a maximum value of 66 points for a maximum value of 264 points for the entire instrument. As a matter of review, to aid the reader each section will be described.

The section for Community of Learners measures the amount of verbal interaction in the classroom examining the nature of the relationship between teacher and student, and the section also examines the questioning that transpires by identifying by whom and to whom the questions are directed. The section on Teaching Strategies measures teacher actions, some of which are outgrowths of the teacher's perceived role in the classroom. This section also examines modifications of class work and scaffolding activities. Learning Strategies measure activities teachers used so students are intellectually active. Examples include activities such as listening to

lectures to working on a project. The section of Curriculum and Assessment measures the content taught and the processes used, assessments and the use of the results.

It should be noted that even though the scores of the CTI are reported numerically, the instrument was intended to be used only as a rubric. The focus of the study did not necessitate the use of numerical scores to conduct T-tests or other statistical measurements. Table 4.1 is a summary of the scores earned for the three observations. Teachers are identified by the codes established to ensure confidentiality and explained in Chapter 3. For example, second grade teachers are identified as 2A and 2B, while the kindergarten teachers are identified by K1 and K2.

Table 4.1Scores from Classroom Observations

Teacher	CTI Section	Observation 1	Observation 2	Observation 3
K1				
	Community of Learners	42	51	64
	Teaching Strategies	42	57	57
	Learning Strategies	39	58	61
	Curriculum and Assessment	44	54	64
	Total	167	220	246
K2				
	Community of Learners	57	59	54
	Teaching Strategies	42	55	61
	Learning Strategies	40	56	53
	Curriculum and Assessment	41	55	54
	Total	180	225	222
1A				
	Community of Learners	55	66	0
	Teaching Strategies	43	62	0

	Learning Strategies	44	61	0
	Curriculum and Assessment	46	62	0
	Total	188	251	0
1B				
	Community of Learners	39	60	0
	Teaching Strategies	46	52	0
	Learning Strategies	43	59	0
	Curriculum and Assessment	42	59	0
	Total	170	230	0
2A				
	Community of Learners	60	65	66
	Teaching Strategies	53	62	61
	Learning Strategies	53	57	62
	Curriculum and Assessment	56	63	56
	Total	222	247	245
2B				
	Community of Learners	59	64	60
	Teaching Strategies	55	57	45
	Learning Strategies	61	57	56
	Curriculum and Assessment	58	51	43
	Total	233	229	204
3A				
	Community of Learners	59	37	36

	Teaching Strategies	48	35	47
	Learning Strategies	55	33	28
	Curriculum and Assessment	55	33	34
	Total	217	138	145
3B				
	Community of Learners	62	66	58
	Teaching Strategies	60	66	57
	Learning Strategies	53	65	50
	Curriculum and Assessment	55	63	54
	Total	230	260	219
4A				
	Community of Learners	65	57	33
	Teaching Strategies	62	57	45
	Learning Strategies	62	59	48
	Curriculum and Assessment	61	59	56
	Total	250	232	182
4B				
	Community of Learners	25	0	32
	Teaching Strategies	62	0	54
	Learning Strategies	59	0	58
	Curriculum and Assessment	48	0	54
	Total	194	0	198
5A				
	Community of Learners	49	0	38

Teaching Strategies	28	0	39
Learning Strategies	24	0	48
Curriculum and Assessment	22	0	39
Total	123	0	164

5B

Community of Learners	54	0	44
Teaching Strategies	60	0	53
Learning Strategies	65	0	55
Curriculum and Assessment	64	0	66
Total	243	0	218

During the second and third observation dates, one notes the absences of scores. During the second observation date, teacher 5A was absent for jury duty, and teachers 4B and 5B were administering the FCAT and their classes could not be disturbed. During the third observation date, both teachers, 1A and 1B, were absent due to illness. These classrooms were not observed because the CTI reflects teacher actions. During testing the teacher acts as a proctor and the results may not be a true reflection of the normal class operations. Also, if teachers are absent they cannot be observed. The absence of these observations should not skew the overall results.

Other reflections

In addition to the four themes identified by the primary and outside researcher, the primary research identified other points of interest that are worth highlighting by reflections. Those other points of interest are: standards, conceptual understanding and the professional learning community.

Standards

As reported in Chapter 4, five teachers said that standards and benchmarks were the greatest challenge they face in the classroom. Additionally, during the second round of classroom observations, two teachers could not be observed because of benchmark testing. Teachers know that students have to meet the benchmarks, and the students have to be exposed to the format of the test questions. One teacher, commenting on this, says, "However, I do not want to make it into this big giant thing that stifles the creativity of the curriculum. The testing environment can suck the creativity out of the teacher and out of the curriculum if you let it….February is the worst month of my year…We all want to get back to what we consider real teaching" (interview with 3B).

Similarly, a fifth grade teacher says,

> "It is different for them than it is for a traditional school because at a traditional school where they use textbooks the kids are seeing those type of questions more frequently especially from a test or from your social studies textbook or you science textbook. Since we do not have those, our kids do not see that. I think testing is something very difficult for them and for us to teach. They do fine but I think it is always a big challenge coming from a constructivist school and that traditional model is different" (interview with 5A).

The principal even hinted at the issue of benchmarks when she said that she would challenge teachers with how to best teach the benchmark standards (interview with principal).

Students from Southwood have performed well on past administrations of the FCAT; however, teachers still feel a need to alter their teaching style or emphasis prior to testing. One teacher describes it as throwing mud against the wall and hoping some of it sticks. An outside observer could say that their instructional strategies are effective, as the high performance on the FCAT is not attainable in just a few weeks of "throwing mud against the wall." The change in teaching style the weeks prior to FCAT, as described by teachers, demonstrates that these

teachers do not believe in the instructional approach to prepare students effectively for standardized testing. The apparent lack of belief in the instructional approach could be due to a lack of understanding of the constructivist philosophy. This issue seems to be divergent from Isaacson's findings, who found that teachers strongly believed that constructivist strategies prepared students for statewide assessments.. Some possible explanations for the divergence are: at the time of Isaacson's study, other issues were more pressing, or, there is more emphasis now on FCAT than at the time of Isaacson's study. It was the less experienced teachers who felt that standards and state assessments were a challenge. The more experienced teachers did not share that they feel that pressure.

Conceptual Understanding

The term conceptual understanding addresses the teachers' understanding of constructivism, both by definition and operationally. In Table 5.1, one sees the teachers' experience beside the scores of the classroom observations. With a few exceptions, the teachers who have been at Southwood for several years, and trained by Isaacson demonstrate more constructivist application in the classroom. These teachers also have more teaching experience, which may contribute to a higher score.

Table 4.2 Summary of Teacher Experience and Classroom Observation Scores

	Years Teaching	Years at Southwood	Obs 1	Obs 2	Obs 3	Average Observation Score
K1	22	6	167	220	246	211
K2	1	1	180	225	222	209
1A	5	5	188	251	0	220
1B	13	6	170	230	0	200
2A	22	9	222	247	245	238
2B	3	2	233	229	204	222
3A	2	1	217	138	145	167
3B	21	6	230	260	219	236
4A	2	2	250	232	182	221
4B	10	9	194	0	198	196
5A	2	2	123	0	164	144
5B	20	8	243	0	218	231

The average score of teachers w ho have taught more than six years at Southwood Elementary School is 218.6. Those teachers who have taught less than six years average an combined average score of 197. As mentioned in Chapter 3 in the discussion on the Constructivist Teaching Inventory, this instrument was used only as a rubric and the scores were not intended, by this researcher, to be used for statistical analysis, such as T-tests. That being said, while the difference in average scores seems noticeable, 218 versus 197, it cannot be determined if that difference is significant. The difference in scores could be due to the training offered by Isaacson, which the more experienced teachers received. The difference could also be due to the

professional growth more experienced teachers have. The years spent in the classroom have allowed teachers to hone their instructional techniques.

Two teachers stand out as exceptions. First is K2, who is a first year teacher, but scored relatively high on the CTI. During her interview she defined constructivism as, "The kids construct their own learning through their own experiences. They build on their prior experiences. … You set up activities based on their interests and what they are interested in learning about." She credits her college training as preparing her for the work at Southwood.

The second exception is 4B who is an experienced teacher with relatively low scores on the CTI. Keep in mind that the score is low in comparison to other scores. The CTI scale runs from 0-264, so an average score of 196 is high on the scale, but low in comparison to other scores. It must be stressed, that this score is a snapshot of the times the classroom was visited.It happened that the two times the room was visited students were working independently at their desks. However, by reading the walls and the whiteboard, it was obvious that group work was part of their day. However, because groups work was not observed it was not recorded on the CTI.

This same teacher, during her interview, had a very clear definition of constructivism. She says, "Constructivism is when children construct knowledge based on what they already know, making connections between past experiences and using that prior knowledge to connect to new learning. Therefore, building and constructing a conceptual base of what the topic is." This same clear definition of constructivism was present in the interviews with the more experienced teachers at Southwood. Teacher K2, previously discussed, also offered this clear definition of constructivism.

The experienced teachers defined constructivism as building on student's prior knowledge and experiences, making connections, to make new knowledge. In contrast, three of the younger teachers had a different definition of constructivism. Teacher 2B defined

constructivism as “a lot of hands on activities” and problem solving. Similar is teacher 4A whose definition of constructivism is, “Student centered, problem based. Giving kids a problem and helping them figure out the answer. Very structured inquiry, giving them a problem, taking it step by step through the solving of it.” Teacher 5A also defines constructivism as, “students are responsible for coming up with their own ways to solve problems in a manner that suits that own individual need.”

Even teachers who have been at Southwood for a few years have a slightly different definition of constructivism. Teacher 1A, who has taught at Southwood for five years, defines constructivism by saying it, “is the way children learn is by giving them the tools and them coming up with their own understanding and then really getting a full grasp of the concepts we are trying to teach.” Teacher 1B, who has been at Southwood for six years, says, “Constructivism is where students are learning through questioning and asking and through their curiosity and making meaning for themselves.” Even teacher 3B, who is veteran teacher with the last six years being at Southwood, defines constructivism by saying, “it is when you know your standards and you have the kids take an active part in figuring out a way to learn those standards.”

Reflecting on the interviews and conceptual definitions offered during those interviews, there has been some loss of a common definition among teachers. The teachers who were at Southwood when it transitioned into using the constructivist philosophy were exposed to intensive training and workgroups. The newer teachers do not have that intensive training and some of the common definition is lost. Take for example teachers 2A, 4B and 5B, all of whom have taught at Southwood for at least eight years. In their definition of constructivism, they all mention the idea of scaffolding by saying that they make connections between prior knowledge/experience and new knowledge. Teacher 5B said, “I always refer to ‘your tiny files’ in your brain you have background knowledge, just pull it forward and make connections.” The definitions of these three experience teachers vary from teachers 2B, 4A and 5A, all of whom

have taught at Southwood for two years. These less experienced teachers all described constructivism as hands on and problem solving. Teach 4A tersely said, "It (constructivism) is student centered and problem based." It is a bit of a pejorative process because new teachers rely on the older teachers to be mentors and coaches. In addition, at each new level, some information, some conceptual understanding is lost. What seems to be lost is the basic premise that constructivism is a philosophy of learning resulting in a philosophy of teaching. Yet, some teachers are defining constructivism by teaching strategies in lieu of learning processes.

An organization's gradual loss of understanding is addressed by Shapiro, Benjamin and Hunt (1995) as they describe entropy. They say, "Entropy describes and predicts a process in which the organization loses its effectiveness so gradually in its passage through the months and years of operation that its inhabitants may hardly notice their loss of vigor, of vitality" (p. 96). This seems to be the case at Southwood, as training and conceptual understanding is handed on from teacher to teacher. Teacher reported that they feel supported, mentoring and coaching practices are in place, yet the deep understanding of constructivism seems to be being slowly lost by new teachers.

However, the previous two paragraphs have to be balanced with how constructivism was initially introduced to the teachers at Southwood. Isaacson had the teachers work together to develop a concept-based curriculum. The staff trainings focused on practical, hands-on information. Recall from Chapter 1, Isaacson notes in her dissertation that the phrase "constructivism" was not even used until the third year of their effort. Isaacson helped teachers develop as a professional learning community that supports, coaches and mentors one another. In light of this historical perspective, the same approach can be seen as still in place. There is not an overt training as to the conceptual underpinnings of constructivism, but the support groups and coaching that takes place is a practical, hands-on approach. In time, it appears, the conceptual understanding happens. Examination of the more veteran teachers' interviews supports this

statement. They began by learning the practical application but over time, they developed a mature understanding of constructivism as a philosophy.

Professional Learning Communities

Teacher interviews highlight the fact that professional learning communities exist at Southwood. Teachers spoke of their grade level teams working together as PLCs. Support groups are also in place for new teachers, but also for any teacher. New teachers are assigned mentors. Coaching happens between teachers. Teachers, and the principal, spoke of pull out days, in which teachers are pulled out of their classrooms for two days a year in order to observe other teachers, across grade level and curriculum.

The faculty at Southwood Elementary School developed a plethora of PLC strategies. Study groups and book talks were also mentioned as important. This allows teachers to choose topics on which they want to focus. Teachers share experiences, insights and strategies. Another important influence for new teachers is the Breakfast Club, which meets on Friday mornings. These meetings allow for casual conversation, allowing for reflective thinking and prompting thoughts for the near future (for example, how to prepare for the upcoming conference night).

In the section on professional learning communities in Chapter2, three issues were shared that confront and could be the demise of innovative organizations: envy of other institutions, the evolutionary process of aging and decline in the organizational life (Tri-partite Theory of Institutional Change and Succession) and the regressive efforts of the standardized reform strategies. Giles and Hargreaves (2006), who identified these three issues, describe the power of professional learning communities when confronting these issues.

> Schools as learning organizations and professional learning communities seem to have the capacity to offset two of the three change forces that threaten the sustainability of innovative efforts. They can learn the halt the evolutionary attrition of change by renewing their teacher cultures, distributing leadership and planning for leadership

succession. They can learn to manage "foreign relations" (Sarason, 1972) with the community, other schools and the district by curbing their arrogance, involving the community in decision making, and resisting the temptation to ask for too many favors from the district. But, judging by all these cases of innovative schools explored in this article the standardized reform agenda is actively undermining the efforts and success of those few, truly creative "knowledge society" schools and their teacher, that currently exits (p. 152).

Summary

This chapter related the data gathered from the teacher interviews. Twelve teachers, two from each grade level K-5, were asked questions, such as: what is your definition of constructivism, what is the role of discourse in the classroom, what is the greatest challenge you face in the constructivist classroom and what is your perception regarding the maintenance and support of constructivism at Southwood Elementary School. The primary and an outside researcher reviewed teacher responses to a variety of questions that yielded four main themes that play an integral part in the instructional program at Southwood Elementary School. The identified themes are: the role of questioning, student-centered learning, active learning and the social aspect of learning. This chapter also related the results of the principal interview and the classroom observations, as measured by the Constructivist Teaching Inventory. This chapter also detailed the results of classroom observations, for which the CTI was used as a rubric. Each teacher who was interviewed had her classroom observed three times, each observation separated by one week. The chapter detailed the results from each observation. The chapter also offered reflections on other issues highlighted in the data.

Chapter 5 will examine these data elements, and discuss how they relate to each other. Chapter 5 will also review the research questions proposed in this study, discuss implications of the study and recommendations for future researcher will be developed.

Chapter 5

Summary of Findings, Conclusions, Implications and Recommendations for Future Research

This study introduced Southwood, an elementary school that used a constructivist philosophy as a change strategy while implementing constructivism as an instructional approach. Chapter 1 examined the background for constructivism, including moderate social constructivism, radical social constructivism, moderate psychological constructivism and radical psychological constructivism. Chapter 1 also laid out the purpose of the study, presented research questions along with discussing the significance and limitations of the study. Assumptions in the study as well as terms were also defined in Chapter 1.

Chapter 2 explored literature related to constructivism, its pedagogical implications including the role of teacher and assessments. Chapter 2 also examined designing concept-based curriculum based on essential questions. The role of discourse in a constructivist classroom was also explored in the review of literature. Windschitl (2002) identified the need for classroom environments that encourage students to put forth and discuss ideas. Discourse is also important in Vygotsky's (1976) zone of proximal development, which says that a person can learn more with the interaction and guidance of a more competent peer. Chapter 2 also examined literature related to professional learning communities. Senge (2001) says that for organizations to endure, they must become a learning organization. Professional learning communities (PLCs) allow organizations to expand their capacity, meaning they can solve problems and make decision more effectively thus renewing the organization. The Tri-Partite Theory of Organizational Change and Succession, a theory of organizational entropy, which was also explored via literature in Chapter 2, posits that organizations move in a predictable pattern depending on the type leader. An organization can renew itself and manage the change by replanning.

After restating the problem and purpose for the study, Chapter 3 described the method to be used in this study. In addition to interviews with the principal and teachers, classrooms were

observed using the Constructivist Teaching Inventory (CTI), whose validity and reliability were discussed. Chapter 4 reviewed the data gathered from the interviews with the principal and teachers, along with results of the classroom observation. The review of data identified four themes: questioning, student centered learning, active learning and social aspect of learning.

This chapter looks at the data as a whole, summarizes findings and takes a closer look at the four themes. The chapter also reflects on three other issues: standards, conceptual understanding and professional learning community. It answers the research questions in light of the data gathered. The chapter also discusses implications of this study and makes recommendations for future research. It begins by reviewing the problem, the purpose, and research questions of this study.

Restatement of the Problem

The Tri-Partite Theory of Organizational Theory of Organizational Entropy, suggests that organizations lose their effectiveness so gradually that its members do not recognize the loss of effectiveness. Therefore, investigation of Southwood to determine if the constructivist philosophy, as Isaacson defined it, had developed and endured since the school experienced a change in principals. Isaacson also recommended a study regarding the endurance and maintenance of the constructivist instructional approach at Southwood, which involves replanning.

Restatement of the Purpose of the Study

The purpose of this study was to gather teacher perceptions regarding the maintenance of the constructivist philosophy at Southwood Elementary School. Additionally, this study sought to determine the level of constructivist strategies used in various classrooms. This purpose answers Isaacson's call for future research to determine how the constructivist philosophical approach is being maintained. A second purpose of this study is to examine how the school managed the

transition to a new principal, in light of the Tri-Partite Theory of Organizational Change and Succession.

Restatement of the Research Questions

Answers were sought to three questions related to the educational model employed at Southwood Elementary School.

1. Is the faculty still using a constructivist educational approach as determined by the Constructivist Teaching Inventory.?
2. What are teacher perceptions regarding how they are being maintained in their practice of constructivist philosophy?
3. Is there congruence between what research (as outlined in the review of literature) defines as constructivist education, teachers' understanding of constructivist education, and classroom practice?

Review of Method

Data was gathered from three sources; interview with the principal, interviews with twelve teachers, two from each grade level K-5, and classroom observations of those same teachers interviewed. Teachers were chosen by the principal for the intent of gaining a purposeful sample. The sample included teachers from each grade level, and with varying years experience at Southwood. The results of this study may be skewed due to the principal selection of teachers, but the principal was facing teacher cuts, and she did not want to send a mixed message to those affected teachers. The focus of this study was to gain perceptions from teachers with varying years of teaching experience at Southwood Elementary School, and the principal selection of teachers met that focus. For each teacher there were three classroom observations, each separated by one week. The classroom observations were scored using the Constructivist Teaching Inventory (CTI) as a rubric. The CTI was developed in 1997 by Greer as part of doctoral dissertation. The CTI describes 44 scales of classroom activity, each rated on a 7-point likert type

scale (0-6). The 44 areas are sub-divided into four sub-groups, each having eleven scales. Those four subscales are: Community of Learners, Teaching Strategies, Learning Strategies and Curriculum and Assessment. The CTI has a reliability and validity factor of .95. The scales on the CTI offered guides to assist in the scoring of classroom activities. The higher the score on the CTI the more constructivist strategies were observed.

Teacher interviews were transcribed. The primary researcher and a qualified, outside researcher reviewed the transcripts and identified key words/ideas/concepts and common themes were identified by both researchers. The use of an outside researcher yields more validity in the findings. While the primary and outside researchers identified the same key concepts and themes, the outside researcher perceived, through the interview transcripts, that students had to work in groups whether they wanted to or not. However, the primary research observed students choosing to work independently.

Themes

As described in Chapter 4, the interview transcripts and identified four main themes at Southwood Elementary School. Those identified themes are: the importance of questioning, student centered learning, active learning and the social influence on learning. A reflection about those themes follows.

Questioning

A common theme identified in the interviews, and evidenced through classroom observations, was the role and importance of questioning. As young as kindergarten, the teacher describes her use of questioning, "to promote their thinking and it also gets them to start making those questions" (interview with K1). A first grade teacher, in explaining why the students lead instruction, says, "…getting them to ask the questions and us doing the research to figure out the answers to their questions" (interview of 1A). A second grade teacher, in describing her role, says, "My role is to ask the right questions…to help them to reach the next level of questioning" (interview of 2A).

In concert with the questioning, is activating prior knowledge and background experience. Teachers try to help students make connections between what they already know and the new material being introduced. This process is known by some as scaffolding, which was described in Chapter 2. Vygotsky, though not using the term "scaffold", described the process in which students build upon prior knowledge (Vygotsky, 1975).

Here are some final thoughts on the topic of questioning. First, the questions presented by teachers were not low level, recall-type questions. The questions employed were higher-order thinking questions (as defined by the use of Bloom's taxonomy (Bloom, Hastings & Madaus, 1971)), calling for students to move beyond their current knowledge. In their interviews, teachers say they stress to their students that it is okay not to know an answer, and making mistakes is normal and not to be feared. One teacher even challenges her students to find mistakes she makes because it reinforces the notion that mistakes are okay.

Students progress through their school years being asked questions and asking questions. The teachers at Southwood stress questioning. During the classroom observations, a male student get up, walk past the teacher to another student and ask that student to critique his writing. In another classroom, students came up to the researcher to ask questions about their schoolwork. It

was impressive that students, in second grade, felt so comfortable with asking questions that they would ask questions of a complete stranger. One could assume the reason students asked the researcher, or other students questions, was not because their teachers refused to help them.

Student Centered Learning

To identify an educational approach as student centered could seem to some to be inane and pointless, as education is supposed to be about students. However, whether it be through the accountability movements, teacher preparation programs or the influence of textbook companies, in many schools the focus of education is on content and standards. Southwood Elementary School has been able to address the content and standards, as evidenced by the scores on the FCAT, while at the same time making students the focus of its educational approach.

Most teachers, through their interviews, commented about lessons being formed in response to student interest. In many classrooms, this approach was observed in practice. For example, students in a first grade class were to write a story about their weekend. The teacher first had students tell a partner about their weekend to generate ideas for the story. After the sharing time, students worked independently to complete their story. This approach was observed in all classes, K-5. One fifth-grade class developed an entire project based on student interest, which built upon previous learning.

In the social studies classroom for fifth grade, student learned about several topics, such as, area, culture, environment and latitude/longitude. The teacher had a project in mind for students that would incorporate the different elements. However, during Spring Break a student sent the teacher an e-mail suggesting that each student design his own island. Students would have to place the island at a latitude and longitude point and the culture the students developed had to be consistent with the climatic environment of that locale. Observations were made of the class working on their projects as well as the presentations their islands to the class. During the presentation, students had to point out the location of their island on a world map. As an example,

one student developed an island that was placed near the artic circle, east of Greenland. There were two main groups of inhabitants, the Elves and the Dwarves. This student described the kind of clothes they wore, where they got the clothes, what they did for jobs, what they exported and imported. She also described the nature of conflicts between the two groups on the island. She had made a three-dimension scale model of the island. Of note, when asked why she chose to place her island in the Artic area, she said that her ancestors where Norwegian and she was always interested in Vikings and the like.

The teacher described how the project took a life of its own. Students asked about making money for their island, could they make "island" art, etc. The teacher said the students wanted to do more that she would have thought of herself. Yet, because the projects were geared around student choice, there was ownership and excitement over the project. Even though the islands were fictional, the elements students incorporated into the island project were factual and had been learned over the year.

On another level of student-centered learning is the choice of reading material. Each classroom had a large array of books that created a classroom library. When students had reading time, the students could choose the book they wanted to read.

Discussed earlier is the concept of "scaffolding," building new knowledge on existing knowledge. To scaffold requires that prior experience and background is identified, on which to build new learning. Each child is different and has different experiences, different backgrounds. To scaffold successfully, the learning environment has to be student-centered. Using a metaphor applicable to the State of Florida, if learning is content-centered, that learning may be built on limestone, which could give way, causing a sinkhole gap in learning.

Active Learning

Another theme identified as important in the operation of Southwood Elementary School is that learning is active. Teachers described the use of hands-on activities and the use of

manipulatives. The island project described in the reflection on student-centered learning is also an example of active learning, because students are busy in the learning process. The opposite of active learning would be passive learning, which could be described as learning via note-taking and book-reading. Again, assertions are not being made one way of the other about the efficacy of either approach, active or passive. This data serve only to address the role that active learning has in the instructional approaches at Southwood Elementary School.

A fifth grade math lesson on solving equations with a variable was observed. Each student had a picture of a scale and several pieces, such as numbered dice and pawns. The pawns represented the variables. The number dice represented the respective number. Students were to place the dice and pawns on the scale to mirror the equation. For example, if the equation read, $3x + 4 = 2x + 8$, the students would place three pawns and a die with the number 4 showing on the left side of the scale, and two pawns and a die with the number 8 showing on the right side of the scale. The teacher explained the importance of the scale to students. To keep the scale level, what you do to one side, you have to do to the other side. These educational tools, the scale, pawns and dice, are examples of manipulatives. This activity is a perfect example of a hands-on, active learning approach.

Another example of active learning can even be found in the teacher professional learning community. A fuller discussion about the professional learning community will follow, but it is important to interject here to highlight his point. There are many aspects to the professional learning community, one of which is the development of support groups. This is a voluntary program for teachers, through which they can discus questions, ideas or issues. Teachers have to be active in this process. Teachers voluntarily attend and voluntarily participate. Through their own professional development, teachers model active learning.

The Social Influence on Learning

In the interviews, every teacher talked about the extensive use of group work. Teachers had students work in small groups, large groups, groups of choice and groups of similar level. In observations, every class had group interaction. The importance of groups was evident in the observations. As with the reflection on active learning, the social interaction is also important in the teacher professional development.

Classrooms were configured so students were groups in some ways. Described previously was a first grade class in which students had to share their weekend with another student prior to writing. Several classrooms were observed which used guided reading activities, in which the teacher read the story but asked reflective questions throughout the story. After one guided reading activity, a second grade teacher divided students into small groups and assigned them a book to read. The teacher related later that the students were assigned to groups by reading level, and the various books were written on varying reading levels.

One particular example emphasizes the importance of group work for the students. A kindergarten teacher gave her students the assignment of writing their own stories. The story could be about anything they wanted. They could not copy the story from a book, the work had to be their own. These students also had to share their story with a partner prior to writing. One girl shared her story with her male partner. This boy remembered reading a book similar to her story, and own his own found the book and copied the title because he did not know how to spell one of the words. The teacher, seeing him copying a book, corrected him, and he put the book away. When the teacher spoke to the boy a moment later about why he was copying, he explained that he was copying to help his partner spell the title of her story. He explained how he had read this book and the title was perfect for his partner's story. The teacher apologized to the boy for assuming he was copying from the book. This example demonstrates, even at the kindergarten level, the importance of social interactions. Students are comfortable with group interactions and, by this example, feel a responsibility to help those in the group.

This theme of social influence on learning is the only theme on which the primary researcher and the outside research did not completely agree. We both agreed that the social influence on learning was certainly a theme. Group work was observed throughout all classrooms. The concern raised by the outside researcher was, "What if a student did not want to work in group?" He felt, through reading the transcripts, students did not have a choice to participate in groups. The observations of classrooms showed differently. While in most classrooms, all students were involved in interaction with someone, there were classrooms in which some students work independently. On one occasion, a girl had been upset by another student and wanted to work by herself. The teacher was observed approaching this girl to tell her that she could join the group when she felt comfortable. It was a impression that students could work independently if they so choose, but the majority of students enjoyed the interaction.

The four themes, which have been identified through the analysis of teacher interviews, are important in the implementation of a constructivist philosophy. The constructivist philosophy posits that people construct new knowledge by building new information on prior knowledge and experiences. The focus of a constructivist classroom is not on the content per se, but on the learner. In the constructivist classroom, teachers activate background knowledge and with the inclusion of new information students build new understanding. New knowledge is acquired via questioning and interaction with others. The four themes of questioning, active learning, student-centered learning and the social influence of learning can be seen as critical elements of a constructivist classroom.

Comparison to Isaacson's Themes

Chapter 3 detailed themes identified in Isaacson's dissertation (2004). Those themes are restated here to serve as a basis to compare Isaacsons' themes to the themes identified in this study.

CP. Constructivist Philosophy	Use of the vision, higher-order thinking, thinking "outside the box", non-scripted curriculum.
CP.1 Understanding the Concept	Thinking about thinking; metacognitive skills, probing to think on my own; figure things out; not given an answer, but justify my solution, find the problem, explain; constructing our own knowledge.
CP.2 Problem-Solving – Decision-making	Questions, find ways to make it better, Principal asked what I want to do, thin k first, plan, answers not given.
CP.3 Reflective Practice	Discuss what happened, explain why, do it better next time, examine pre-requisite skills. Dig deeper, look back-and then look forward.
CP.4 Risk-free environment	Try it out, experiment, if it doesn't work, try again, work it out, and think creatively.
CP.5 Learner-Centered	How children learn, think of the kids first, observe listen, watch, and provide opportunities, life long learning, creative approach, kids can explain their thinking; create a rule.
C. Change	Movement, disruption, anticipation of something being different than before.
C.1 Evaluation of Curriculum	Understanding-math, integrated units, any subject area that changes as it is learned, finding

	better ways to instruct- Resistance/excitement, adding on/substituting new strategies.
C.2 Change of models	Vertical team concept-resistance/excitement; looping concept-resistance/excitement
C.3 Change of teams	Disruptions when someone leaves/joins the team, teachers choosing to move seen as negative/positive experience.
P. Perception	Believing, perspective. Statements relating to job satisfaction. Describing incidences that occurred. Statement often overlapped with Affect.
L. Leadership	Focus on the principal – negative/positive experiences
L.1 Support of teachers	Feel supported, provided with ideas, suggestions, help with students, help with parents, not threatened by interaction, empowers u, trust us to make decisions.
L.2 Feeling appreciated	Spends time making teachers feel appreciated, recognized-publicly and in private, complimentary.
L.3 Provides a professional work environment	Provides materials and supplies because teacher need them, values input into what teachers want, provided time to work with teammates, feel comfortable, safe.

TL. Teachers as Leaders	The assumption by the researcher was that all items identified, relating to the team building, belong in this section. If someone initiates a group getting together or organizes a group project, then a leader is recognized.
TL.1 Collaboration	Collaborating, getting together as a group, planning together, working together.
TL.2 Trust building and forming relationships	Like my team, like working with my pod members, work well together, get along, know value of communication, become a team.
TL.3 Asked for help and received it	Willing to ask for help, teachers help me
TL.4 Value of personality styles and use of Gregoric	Understand each other, understand myself easier to work with people, laugh
TL.5 Value of Positive Attitude FISH philosophy	FISH helped me, attitude, and play, make their day, importance of positive attitude
TL.6 Took on leadership role	Leadership, mentor and committee work/chair
A. Affect	Feeling words: happy, love, excited, school as a family

The themes identified in this study, in addition to the other reflections offered in Chapter 4, mirror the themes identified by Isaacson. The themes of questions, student centered learning, active learning and the social influence on learning are consistent to Isaacson themes designated by Constructivist Philosophy (CP). Isaacson identified themes such as problem solving, reflective practice, learner centered, understanding the concept. These themes, and their accompanying descriptors, are the themes that run through the data of the present study.

Isaacson's study focused on the use of the constructivist strategies as a change model, so the themes identified in her study encompass areas that were not the focus of the present study. However, the role, importance and impact of professional learning communities is highlighted by both studies. One could refer to Isaacsons' themes designated by the Leadership (L) and Teachers as Leaders (TL) categories to find consistent statements with the present study. The consistently over the years points to the ownership teachers have at Southwood Elementary School. Teachers view themselves as leaders. The Principal sees her job as enabling teachers to recognize their leadership role. Teachers grasp the leadership role by supporting other teachers on their team and teachers new to the school.

Other reflections

In addition to the four themes identified by the primary and outside researcher, the primary research identified other points of interest that are worth highlighting by reflections. Those other points of interest are: standards, conceptual understanding and the professional learning community. The reflections were highlighted in Chapter 4 and are worth restating here.

Standards

As reported in Chapter 4, five teachers said that standards and benchmarks were the greatest challenge they face in the classroom. Additionally, during the second round of classroom observations, two teachers could not be observed because of benchmark testing. Teachers know that students have to meet the benchmarks, and the students have to be exposed to the format of the test questions. One teacher, commenting on this, says, "However, I do not want to make it into this big giant thing that stifles the creativity of the curriculum. The testing environment can suck the creativity out of the teacher and out of the curriculum if you let it….February is the worst month of my year…We all want to get back to what we consider real teaching" (interview with 3B).

Similarly, a fifth grade teacher says,

> "It is different for them than it is for a traditional school because at a traditional school where they use textbooks the kids are seeing those type of questions more frequently especially from a test or from your social studies textbook or you science textbook. Since we do not have those, our kids do not see that. I think testing is something very difficult for them and for us to teach. They do fine but I think it is always a big challenge coming from a constructivist school and that traditional model is different" (interview with 5A).

The principal even hinted at the issue of benchmarks when she said that she would challenge teachers with how to best teach the benchmark standards (interview with principal).

Students from Southwood have performed well on past administrations of the FCAT; however, teachers still feel a need to alter their teaching style or emphasis prior to testing. One teacher describes it as throwing mud against the wall and hoping some of it sticks. An outside observer could say that their instructional strategies are effective, as the high performance on the FCAT is not attainable in just a few weeks of "throwing mud against the wall." The change in teaching style the weeks prior to FCAT, as described by teachers, demonstrates that these teachers do not believe in the instructional approach to prepare students effectively for standardized testing. The apparent lack of belief in the instructional approach could be due to a lack of understanding of the constructivist philosophy. This issue seems to be divergent from Isaacson's findings, who found that teachers strongly believed that constructivist strategies prepared students for statewide assessments.. Some possible explanations for the divergence are: at the time of Isaacson's study, other issues were more pressing, or, there is more emphasis now on FCAT than at the time of Isaacson's study. It was the less experienced teachers who felt that standards and state assessments were a challenge. The more experienced teachers did not share that they feel that pressure.

Conceptual Understanding

The term conceptual understanding addresses the teachers' understanding of constructivism, both by definition and operationally. In Table 5.1, one sees the teachers' experience beside the scores of the classroom observations. With a few exceptions, the teachers who have been at Southwood for several years, and trained by Isaacson demonstrate more constructivist application in the classroom. These teachers also have more teaching experience, which may contribute to a higher score.

Table 5.1 Summary of Teacher Experience and Classroom Observation Scores

	Years Teaching	Years at Southwood	Obs 1	Obs 2	Obs 3	Average Observation Score
K1	22	6	167	220	246	211
K2	1	1	180	225	222	209
1A	5	5	188	251	0	220
1B	13	6	170	230	0	200
2A	22	9	222	247	245	238
2B	3	2	233	229	204	222
3A	2	1	217	138	145	167
3B	21	6	230	260	219	236
4A	2	2	250	232	182	221
4B	10	9	194	0	198	196
5A	2	2	123	0	164	144
5B	20	8	243	0	218	231

The average score of teachers who have taught more than six years at Southwood Elementary School is 218.6. Those teachers who have taught less than six years average an combined average score of 197. As mentioned in Chapter 3 in the discussion on the Constructivist

Teaching Inventory, this instrument was used only as a rubric and the scores were not intended, by this researcher, to be used for statistical analysis, such as T-tests. That being said, while the difference in average scores seems noticeable, 218 versus 197, it cannot be determined if that difference is significant. The difference in scores could be due to the training offered by Isaacson, which the more experienced teachers received. The difference could also be due to the professional growth more experienced teachers have. The years spent in the classroom have allowed teachers to hone their instructional techniques.

Two teachers stand out as exceptions. First is K2, who is a first year teacher, but scored relatively high on the CTI. During her interview she defined constructivism as, "The kids construct their own learning through their own experiences. They build on their prior experiences. … You set up activities based on their interests and what they are interested in learning about." She credits her college training as preparing her for the work at Southwood.

The second exception is 4B who is an experienced teacher with relatively low scores on the CTI. Keep in mind that the score is low in comparison to other scores. The CTI scale runs from 0-264, so an average score of 196 is high on the scale, but low in comparison to other scores. It must be stressed, that this score is a snapshot of the times the classroom was visited.It happened that the two times the room was visited students were working independently at their desks. However, by reading the walls and the whiteboard, it was obvious that group work was part of their day. However, because groups work was not observed it was not recorded on the CTI.

This same teacher, during her interview, had a very clear definition of constructivism. She says, "Constructivism is when children construct knowledge based on what they already know, making connections between past experiences and using that prior knowledge to connect to new learning. Therefore, building and constructing a conceptual base of what the topic is." This same clear definition of constructivism was present in the interviews with the more experienced

teachers at Southwood. Teacher K2, previously discussed, also offered this clear definition of constructivism.

The experienced teachers defined constructivism as building on student's prior knowledge and experiences, making connections, to make new knowledge. In contrast, three of the younger teachers had a different definition of constructivism. Teacher 2B defined constructivism as "a lot of hands on activities" and problem solving. Similar is teacher 4A whose definition of constructivism is, "Student centered, problem based. Giving kids a problem and helping them figure out the answer. Very structured inquiry, giving them a problem, taking it step by step through the solving of it." Teacher 5A also defines constructivism as, "students are responsible for coming up with their own ways to solve problems in a manner that suits that own individual need."

Even teachers who have been at Southwood for a few years have a slightly different definition of constructivism. Teacher 1A, who has taught at Southwood for five years, defines constructivism by saying, "it is the way children learn, by giving them the tools and encouraging them to come up with their own understanding and then really getting a full grasp of the concepts we are trying to teach." Teacher 1B, who has been at Southwood for six years, says, "Constructivism is where students are learning through questioning and asking and through their curiosity and making meaning for themselves." Even teacher 3B, who is veteran teacher with the last six years being at Southwood, defines constructivism by saying, "it is when you know your standards and you have the kids take an active part in figuring out a way to learn those standards."

Reflecting on the interviews and conceptual definitions offered during those interviews, there has been some loss of a common definition among teachers. The teachers who were at Southwood when it transitioned into using the constructivist philosophy were exposed to intensive training and workgroups. The newer teachers do not have that intensive training and

some of the common definition is lost. Take for example teachers 2A, 4B and 5B, all of whom have taught at Southwood for at least eight years. In their definition of constructivism, they all mention the idea of scaffolding by saying that they make connections between prior knowledge/experience and new knowledge. Teacher 5B said, "I always refer to 'your tiny files' in your brain you have background knowledge, just pull it forward and make connections." The definitions of these three experience teachers vary from teachers 2B, 4A and 5A, all of whom have taught at Southwood for two years. These less experienced teachers all described constructivism as hands on and problem solving. Teach 4A tersely said, "It (constructivism) is student centered and problem based." It is a bit of a pejorative process because new teachers rely on the older teachers to be mentors and coaches. In addition, at each new level, some information, some conceptual understanding is lost. What seems to be lost is the basic premise that constructivism is a philosophy of learning resulting in a philosophy of teaching. Yet, some teachers are defining constructivism by teaching strategies in lieu of learning processes.

An organization's gradual loss of understanding is addressed by Shapiro, Benjamin and Hunt (1995) as they describe entropy. They say, "Entropy describes and predicts a process in which the organization loses its effectiveness so gradually in its passage through the months and years of operation that its inhabitants may hardly notice their loss of vigor, of vitality" (p. 96). This seems to be the case at Southwood, as training and conceptual understanding is handed on from teacher to teacher. Teachers reported that they feel supported, mentoring and coaching practices are in place, yet the deep understanding of constructivism seems to be being slowly lost by new teachers.

However, the previous two paragraphs have to be balanced with how constructivism was initially introduced to the teachers at Southwood. Isaacson had the teachers work together to develop a concept-based curriculum. The staff trainings focused on practical, hands-on information. Recall from Chapter 1, Isaacson notes in her dissertation that the phrase

"constructivism" was not even used until the third year of their effort. Isaacson helped teachers develop as a professional learning community that supports, coaches and mentors one another. In light of this historical perspective, the same approach can be seen as still in place. There is not an overt training as to the conceptual underpinnings of constructivism, but the support groups and coaching that takes place is a practical, hands-on approach. In time, it appears, the conceptual understanding happens. Examination of the more veteran teachers' interviews supports this statement. They began by learning the practical application but over time, they developed a mature understanding of constructivism as a philosophy.

Professional Learning Communities

Teacher interviews highlight the fact that professional learning communities exist at Southwood. Teachers spoke of their grade level teams working together as PLCs. Support groups are also in place for new teachers, but also for any teacher. New teachers are assigned mentors. Coaching happens between teachers. Teachers, and the principal, spoke of pull out days, in which teachers are pulled out of their classrooms for two days a year in order to observe other teachers, across grade level and curriculum.

The faculty at Southwood Elementary School developed a plethora of PLC strategies. Study groups and book talks were mentioned as important. This allows teachers to choose topics on which they want to focus. Teachers share experiences, insights and strategies. Another important influence for new teachers is the Breakfast Club, which meets on Friday mornings. These meetings allow for casual conversation, allowing for reflective thinking and prompting thoughts for the near future (for example, how to prepare for the upcoming conference night).

In the section on professional learning communities in Chapter2, three issues were shared that confront and could be the demise of innovative organizations: envy of other institutions, the evolutionary process of institutional aging and decline in the organizational life (Tri-partite Theory of Institutional Change and Succession) and the regressive efforts of the standardized

reform strategies. Giles and Hargreaves (2006), who identified these three issues, describe the power of professional learning communities when confronting these issues.

> Schools as learning organizations and professional learning communities seem to have the capacity to offset two of the three change forces that threaten the sustainability of innovative efforts. They can learn to halt the evolutionary attrition of change by renewing their teacher cultures, distributing leadership and planning for leadership succession. They can learn to manage "foreign relations" (Sarason, 1972) with the community, other schools and the district by curbing their arrogance, involving the community in decision making, and resisting the temptation to ask for too many favors from the district. But, judging by all these cases of innovative schools explored in this article the standardized reform agenda is actively undermining the efforts and success of those few, truly creative "knowledge society" schools and their teacher, that currently exits (p. 152).

Answering the Research Questions

The following section will examine the data gathered from the interviews and classroom observations to determine if answers can be found for the research questions.

Research Question #1

Is the faculty still using a constructivist educational approach, as determined by the Constructivist Teaching Inventory?

It was evident that teachers were teaching and operating out of a constructivist philosophical model. For most teachers three classroom observations were conducted and scored using the CTI as a rubric. The CTI scale runs from 0-264. The average scores for teacher observations ran from a low of 144 to a high of 238.

Two points arose during this study. First, teachers intimated in their interviews that there were teachers who did not understand constructivism and were not using that as a model. The research question asks if the faculty is still using a constructivist educational approach, and the

answer is "Yes." Had the question been, "Is the *entire* faculty using a constructivist educational approach?" One would have had to answer "no" based on teacher statements, with the caveat that every teacher was not observed. In their interviews, three teachers (2A, 3A, 4B) commented that the constructivist approach employed at Southwood is partially maintained by the hiring practices of the principal. These comments, in addition to the answer to the research question, highlights the important role the principal has in instruction at Southwood Elementary School.

Second, the use of the CTI demonstrates that teaching practices run on a continuum, in this setting the continuum regarding constructivist-teaching strategies, ranging from a very structured, scripted lesson to a student-initiated, student-led lesson. This instrument drove home the point that classroom practices have an ebb and flow to them, which spans the continuum depending on topic, task or teacher. One could look at the teaching day the same as watching a television set. The television picture is made up of thousands of pixels that, together, present a picture. The classroom day is made up of "pixels" of time that, together, present an overall picture of methodology. However, some points of time may not independently be reflective of the overall method. In this setting, the overall approach may be constructivist in philosophy, but the time at which observations were conducted activities may have been in place that are not reflective of the overall constructivist approach of the classroom. This is the reason three observations were scheduled, i.e., to catch more pixels of the picture.

Recall from Chapter 2, Alesandrini and Larson (2002) identify a common misconception that teachers make is that hands-on activity is synonymous with a constructivist activity. As identified in the data of Chapter 4, and addressed earlier in this chapter, it seems as though some of the younger teachers do not have a deep understanding of the constructivist philosophy, and identify constructivism with hands-on activity, falling prey to the misconception identified by Alesandrini and Larson (2002).

Research Question #2

What are teacher perceptions regarding how they are being maintained in their practice of constructivist philosophy?

The data from interviews reflects that teachers feel as though they are being supported in their implementation of a constructivist approach. They perceive the support from the principal, fellow team teachers, mentors, coaches and through the curriculum approach and resources. Of concern, as noted in the previous section on Conceptual Understanding, there seems to be a loss of a unified vision of constructivism. So, while the teachers may feel supported in their efforts, the philosophical approach itself may not be maintained.

Research Questions # 3

Is there congruence between what research defines as constructivist education, teachers' understanding of constructivist education, and classroom practice?

This study is an outgrowth of the work previously conducted by Isaacson (2004). In order to determine if there is congruence between literature, teacher understanding and classroom practice of constructivism, we must accept Isaacson's definition of constructivism, which says that, "Constructivism is an epistemological philosophy that explains that people construct knowledge through the interaction of their experience and knowledge with new material. Subsequently, this interaction yields new understandings" (Isaacson, 2004). Isaacson used this definition in training teachers for use in classrooms.

The review of literature in Chapter 2 describes various components that are common to a constructivist approach to teaching. One component relates to the teacher's role in the classroom. McKeon and Beck (1999) identify that the teacher is viewed as a guide, a facilitator, to assist students to make their own connections. This view of teacher role also came out during 10 teacher interviews and classroom observations. For this component, there appears to be congruence between literature, teacher perception and classroom application of teacher role.

Howe and Berv (2000) have shown the ability to meet standards using a constructivist approach when they say that constructivist practitioners are not precluded from using direct methods of instruction. During the interviews, all teachers said they use direct instruction in some form, usually 10-15 minute mini-lessons. This mini-lesson approach was also evident during classroom observations. The mini-lessons observed served as a springboard for other activities.

Isaacson (2004) defined constructivism as making connections with prior knowledge and experiences to new material. Driver and Bell (1986) say that it is not so much what we abstract from a situation but what we bring to it that determines the sense we make of it. Teachers, during their interviews, identified the quest to draw on students' prior experiences and knowledge, and thus scaffold learning. This was also evident in classroom observations as teachers asked students what they knew about a certain subject. Teachers questioned students to probe deeper, to understand student knowledge.

The role of student discourse is an important component of a constructivist classroom. Gregory (2002) posits that a constructivist environment must include dialogue between the proponent of a new idea and those she hopes to convince, and that people become vulnerable to critiques by members of their communities. Tobin (1998) says that, "scientific knowledge needs to be co-constructed in interaction in which students and the teacher interact verbally using a shared language" (p. 203). Driver, et al (1994) speak of the role of discourse in science education by saying that knowledge and understandings, including scientific understanding, are constructed when individuals engage socially in talk and activity about share problems or tasks. During the interviews, teachers identified the importance and preponderance of student discourse in their classroom. Student discourse, with and among students and teachers, was observed in every classroom observed. Two prime examples are worth noting.

In a second grade class, students were engaged in a writing exercise. The teacher was circulating and assisting students individually, asking students about their main idea, asking for

more details, etc. One boy rose from sit set of tables, walked past the teacher to a female student and asked her to read his story and tell him how it sounds. The second example is from a kindergarten classroom. To begin the day students gather near the board to take attendance and order lunches. These activities are performed, on a rotating basis, by the students. Student names are on magnetic strips that can stick to the board and students place the names in the appropriate columns, "Absent," "Present – Need Lunch," "Present –Brought Lunch." The students then alphabetize the names in each column. The girl placing the names that day was having difficulty with the alphabetical order, but one student said, "I think 'D' comes before 'G.'" another student agreed. The task was complete in a non-threatening atmosphere of shared responsibility, because it was not just the girl who alphabetized; it was the whole class that alphabetized.

Gregory (2002) and Brooks and Brooks (1998) both point out the importance of relating to the interest of students. A fifth grade teacher shared a story that demonstrates this component. This fifth grade class had studied about geography, culture, climate and customs. The teacher had an annual project for the fourth nine quarter that would tie together all these aspects. However, during Spring Break one of her students sent her an e-mail and suggested that all the students invent their own island, on which students would have to incorporate all the aspects previously studied. The teacher related how the discussion in class evolved to students asking if they could make their own money, or design their own costumes. The teacher was amazed at how "into" the activity the students were, commenting that, if she had to design this project herself, she would not have thought of most of what the students developed.

Is there congruence between constructivism as defined by literature, by the teachers and displayed in classroom activities? One would have to say, "Yes," on the most part. As discussed in the section on conceptual understanding, there appears to be a variance of conceptual understanding among teachers, however the implementation of constructivist practices and activities still exist. This study, maybe in not so elegant terms, has tried to differentiate between

constructivism as a philosophy of learning and the application of the constructivist philosophy via classroom strategies. The constructivist classroom strategies identified in the literature are also found at Southwood, as observed in the classrooms and expressed by teachers in their interviews. However, there seemed to be a variance in teachers' understanding of constructivism as a philosophy of learning. For example, some teachers defined constructivism by the classroom strategies, i.e., hands-on approach, active learning, background knowledge, and while this definition is not incorrect, it focuses on the application of the philosophy, and not the philosophy itself.

Implications of the Study

As stated in Chapter 3, one of the limitations of this study is there is only 1 Southwood Elementary School, which thus limits the generalizations that can be made from this study's findings. Stated also in Chapter 3, is the notion that this study could be significant to programs that use constructivist approaches. The data gathered, along with reflections made on the data, could be held as significant on various points.

First, the professional learning communities, that are used to support and maintain the constructivist philosophy, cannot be the sole dispensers of information. As described in the section on conceptual understanding, there is a perceived loss of understanding with each new generation of teachers. To enhance, and unify, the conceptual understanding, a whole group in-service, should be conducted which comprises the replanning process necessary to avoid entropy and the loss of established constructivist practices. Described by teachers as support were monthly sessions at which teachers identified what they wanted to study. If constructivism (as a model) is a learning process by which we connect prior knowledge and experience to new material, then we necessarily have to recall and re-define constructivism (as a subject). By reestablishing the base of understanding, teachers can then connect new experiences and knowledge, and implement constructivist strategies more effectively.

The role of professional learning communities is important in any school setting, whether a constructivist approach is being implemented or not. In the case of Southwood Elementary School, the development of the professional learning community has been shown to be an effective vehicle in educating, training, supporting and socializing new teachers into constructivist practices.

Shapiro, Benjamin and Hunt (1995) say, "In education, even in schools which manage to become 'effective,' such as in restructuring to meet their missions and goals, inevitably lose their so-called effectiveness unless certain deliberate lines of action are developed and implemented,

lines of action which have not been recognized or articulated to this point" (p. 227). Schools and programs based on a constructivist philosophy should implement a focused staff development program as a line of action as a replanning process. The focused staff development will then serve as a foundation upon which other development activities are built, such as the professional learning communities, mentoring, coaching and self-study.

The experience of Southwood Elementary School has shown that it is possible for a school implementing a constructivist approach to survive the departure of a synergistic leader. The distribution of leadership, via the professional learning community approach, made teachers the leaders and owners of the school, and the principal a facilitator. Because of this approach, the school did not lose the leader at Isaacson's retirement. In other words, an organization can stop organizational entropy, as the Tri-Partite Theory predicts, with organizational structures, such as PLCs, which Southwood Elementary School did.

This study, as well as the experience at Southwood Elementary School, seems to support the belief that constructivist strategies can withstand even the most extreme form of accountability, in this case the Florida Comprehensive Achievement Test.

That being said, it is significant to note that teachers scored relatively high in the implementation of constructivist strategies, based on CTI scores. The variance in understanding of the constructivist philosophy did not hinder the application of the strategies. It would appear that teachers could be trained to say certain things, behave in certain ways and implement constructivist strategies in the classroom. The lack of conceptual understanding of the constructivist philosophy (as a philosophy of learning, not a philosophy of teaching) will add to the lack of belief in the effectiveness of the approach, as predicted in the Tri-Partite Theory and as found in this study.

Future Research

This study grew out of the future research section of Isaacson's (2004) dissertation. During the study other areas of questions arose which would lead to future research.

One, a study similar to this study could be conducted in a few years to again measure teacher understanding of the constructivist philosophy and the operational implementation in the classroom. This study would also provide a longitudinal picture of constructivist change. If the loss of conceptual understanding continues, then the constructivist basis for the school is in jeopardy. Additionally, if the school district appoints a new principal, who is not familiar or supportive of the constructivist philosophy, then again the constructivist basis is in jeopardy.

Two, three teachers spoke to the issue of parent's acceptance and support of the instructional approach. An interesting study would be to gather parent perceptions of the effects of the constructivist instructional approach.

Third, during the interviews, teachers hinted at other teachers who did not understand the constructivist model, and who transferred to different schools. It would be interesting to track down those teachers and conduct interviews to determine their perceptions of the constructivist approach. This research could also examine teacher efficacy in and out of a constructivist model.

Fourth, Southwood is a K-5 school that has been in operation for 10 years. Students progress from K-5 in an environment that encourages questioning and student dialogue. However, what about after they leave Southwood? It would be interesting to track students' academic and social progress through middle and high school years. Also interesting would be to determine if the middle and high school had to adapt in any way to Southwood students, for the same reasons mentioned earlier.

Finally, this study used to Constructivist Teaching Inventory (CTI) as a rubric, and the intent was not to make statistical analysis. Future studies could use the CTI and conduct statistical analysis. This research could compare the differences between teachers with different year's

experience. Additionally, the CTI could use to observe classrooms at schools not using constructivist strategies, and results between schools could be compared.

Summary

Southwood Elementary School implemented a constructivist philosophy as a basis for instructional practices. When the philosophy was first introduced, and documented, by Isaacson (2004) intensive training was done with teachers. This study sought to examine the maintenance and support of the constructivist philosophy. This study sought to determine if there is congruence between what literature says is constructivism, what teachers say is constructivism and how strategies are applied in the classroom. Data was gathered via interviews with teachers and administration, along with observations of teacher classrooms.

This research project found that the school is still committed to the use of constructivist strategies, while still facing the challenge of documenting benchmark attainment. As stated earlier this study tried to differentiate between constructivism as a philosophy of learning and the application of the constructivist philosophy via classroom strategies. The literature review in Chapter 2 offered a foundation for both the philosophy of learning and the application of that philosophy. The strategies identified in the review of literature are being employed with success, as measured by the statewide assessment instrument, at Southwood. However, there seemed to be a difference in the conceptual understanding of constructivist philosophy between teachers. While some teachers defined constructivism in terms of the philosophy, others defined it in terms of the application of the philosophy.

This research project generated information and in turn, more questions for future research. Those future research ideas are outlined earlier in this chapter. This chapter also shares some implications this research study has for other programs.

The success attained at Southwood Elementary School over the past several years can be attributed to the implementation of the constructivist philosophy. Evident throughout the study is

the fact that it is the teachers that make the approach work. Teachers who take this path must work harder, concentrate more, and embrace larger pedagogical responsibility than if they only assigned text chapters and seatwork (Windschitl, 2002). It is fitting to end with a quote from teacher 2A, “Our principal keeps us very much alive but it is not her torch, it is ours and part of what we all believe, so it is easily maintained” (interview with 2A).

References

Abbotts, M. L.& Fouts, J. T.(2003, February). *Constructivist Teaching and Student Achievement: The Results of a School-level Classroom Observation Study in Washington.* Washington School Research Center. Technical Report #5.

Alesandrini, K., & Larson, L. (2002, Jan/Feb). Teachers Bridge to Constructivism. *The Clearing House, 75, 118-124.*

Airasian, P. W. & Walsh, M.E. (!997, Apr). Cautions for Classroom Constructivists. *The Education Digest*, *62,* 62-68.

Bloom, B.S., Hastings, J.T. & Madaus, G.F. (1971). *Handbook on formative and summative evaluation of student learning*. New York: McGraw-Hill.

Bloor, D. (1976). *Knowledge and Social Imagery*. London:Routledge & Keagan Paul.

Bogdan, R.C.& Biklen, S.K.(2003). *Qualitative Research for Education: An Introduction to the Theories and Methods* (4th ed). Boston, MA: Allyn and Bacon.

Bredo, E. (2000). Reconsidering social constructivism: The relevance of George Herbert Mead's interactionism. In. Phillips, D. C. (Ed.) *Constructivism in Education*. (pp. 127-157) Chicago, Illinois. University of Chicago Press.

Brighton, C.M. (2002, Summer). Straddling the fence: Implementing best practices in an age of accountability. *Gifted Child Today*. *25*(3) 30-33.

Brooks, M. G. Brooks, J.G. (1999, Nov.).The Courage to be Constructivist. *Educational Leadership, 57,* 18-24.

Brooks, J. G. & Brooks, M. G. (1993). *In Search of Understanding: The Case for Constructivist Classrooms*. Alexandria, VA: Association of Supervision and Curriculum Development.

Bruning, R. H., Schraw, G.J., Norby, M.N. & Ronning, R.R. (2004). *Cognitive*

Psychology and Instruction. (4th ed) Upper Saddle River, NJ. Pearson Educational, Inc.

Driver, R., Asoko, H., Leach, J., Mortimer, E. & Scott, P. (1994, Oct.). Constructing Scientific Knowledge in the Classroom. *Educational Researcher. 23*(7) 5-12

Driver, R. & Bell, B. (1986, March). Students' thinking and the learning of science: a constructivist view. *The School Science Review. 67*(240) 443-56

Dufour, R. & Eakers, R. (1998). Professional Learning Communities at Work: Best Practices for Enhancing Student Achievement. Bloomington, IN: National Education Service.

Erickson, H. L. (2001). *Stirring the Head, Heart and Soul: Redefining Curriculum and Instruction* (2nd Ed). Thousand Oaks, California. Corwin Press.

Erickson, H. L. (2002). *Concept-based Curriculum and Instruction: Teaching Beyond the Facts.* Thousand Oaks, California. Corwin Press.

Fluellen, J. E. (2003). Teaching for Understanding: Harvard Comes to Pennell Elementary. A Teacher Research Report. Philadelphia Writing Project: University of Pennsylvania. (ERIC Document Reproduction Service No. ED 480 234).

Gijbels, D.,Dochy, F., Van de Bossche, P., & Seger, M. (2005, Spring). Effects of Problem-Based Learning: A Meta-analysis from the Angle of Assessment. *Review of Educational Research 75*(1) 27-61.

Giles, C. & Hargreaves, A. (2006, Feb.). The sustainability of innovative schools as learning organizations and professional learning communities during standardized reform. *Education Administration Quarterly. 42*(1) pp 124-156.

Green, S. K. & Gredler, M.E. (2002). A review and analysis of constructivism for school-based practice. *School Psychology Review*, *31,* 53-71.

Greer, M. (1997). Measuring constructivist teaching practices in first and third grades.

(Doctoral Dissertation, University of Toledo, 1997). Proquest Dissertation Abstracts AAT 9814938.

Greer, M., Hudson, L. M. & Wiersma, W. (1999). *The Constructivist Teaching Inventory: A New Instrument for Assessing Constructivist Teaching Practices in The Elementary Grades.* (TM030083). Toledo, OH: Department of Educational Psychology, Research, and Social Foundations. (ERIC Document Reproduction Service No. ED434122)

Gregory, M. R. (2002, Fall). Constructivism, Standards and the classroom community of inquiry. *Educational Theory*, *52,* 397-406.

Gunstone, R. (2000).Constructivism and Learning Research in Science Education. In. Phillips, D. C. (Ed.) *Constructivism in Education*. (pp. 19-40) Chicago, Illinois. University of Chicago Press.

Hipp, K. (2001). *Learning about Learning Communities: A Case Study Approach*. Austin, TX: Southwest Educational Development Lab. (ERIC Document Reproduction Service No. ED 481 979).

Hirumi, A. (2002). Student-Centered, Technology-rich Learning Environments (SCenTRLE): Operationalizing Constructivist Approaches to Teaching and Learning. *Journal of Technology and Teacher Education 10*(4) 497-537.

Howe, K. R. & Berv, J. (2000). Constructing Constructivism, Epistemological and Pedagogical. In. Phillips, D. C. (Ed.) *Constructivism in Education*. (pp. 19-40) Chicago, Illinois. University of Chicago Press.

Isaacson, L.S. (2004). *Teachers' Perception of Constructivism as an Organizational Change Model: A Case Study*. (Doctoral Dissertation. University of South Florida. 2004). Proquest Dissertation Abstracts AAT 0388366.

Isaacson, L. & Shapiro, A. (2004). A Constructivist Case Study: Southwood School –

Three Years of Constructivism: Impressive Changes. Unpublished manuscript.

Janesick, V. (2000). The Choreography of Qualitative Research Design. In Denzin & Lincoln (Eds) *Handbook of Qualitative Research* (2nd Ed) (pp. 379-399). Thousand Oaks, CA: SAGE Publications.

Kruse, S., Louis, K. & Bryke, A.. (1994). *Building a Professional Learning Community in Schools.* In Newman, F. Issues in Restructuring School. Madison, WI: Center on Organization and Restructuring of Schools. (Eric Document Reproduction Service No. ED 370 214).

Larkin, M. (2002). Using scaffolded instruction to optimize learning. *ERIC Digest*. Arlington, VA: Clearinghouse for Disabilities and Gifted Education (ERIC Document Reproduction Service No. ED 474 301).

Livingston, J. (2003). *Metacognition: An Overview*. Buffalo, NY: University of Buffalo. (ERIC Document Reproduction Service No. ED 474 273)

Matthews, M. (2000). Appraising Constructivism in Science and Mathematics Education. In Phillips, D. C. (Ed.) *Constructivism in Education*. (pp. 161-192) Chicago, Illinois. University of Chicago Press.

McCarty, L. P. & Schwandt, T.A. (2000). Seductive Illusions: Von Glasersfeld and Gergen on Epistemology and Education. In Phillips, D. C. (Ed.) *Constructivist in Education*. (pp. 41-85) Chicago, Illinois. University of Chicago Press.

McKeown, M. G. & Beck, I. L. (1999, Nov.). Getting the Discussion Started. *Educational Leadership*, *57,* 25-28.

Mead, G.H. (1934). *Mind, Self and Society from the Standpoint of the Social Behaviorist*. Chicago: University of Chicago Press.

Merton, R.K. (1957). *Social Theory and Social Structure*. New York: Free Press.

Moustakas, C. (1994). *Phenomenological Research Methods*. Thousand Oaks, CA:

SAGE Publications.

Mowatt, A.M. & VanName, A.D (2002). Constructivist Leaders Mental Checklist. In Shapiro (2002). *Case Studies in Constructivist Leadership and Teaching*. Lanham, Maryland. Scarecrow Press.

Neiman, A. M. (2001, Fall). Phenomenology Revisited: Constructivism as Construct. *Religious Education*, *96,* 441-443.

Newman, F. & Wehlage, G. (1995). *Successful School Restructuring: A report to the Public and Educators*. Madison, WI: Center on Organization and Restructuring of Schools. (ERIC Document Reproduction Service No. ED 387 925).

Orme, M.P. & Monroe, E. E.(2005). The Nature of Discourse as Students Collaborate on a Mathematics Webquest. In Maddux, C.D. & Johnson, D. L. (Eds) *Internet Applications of Type II Uses of Technology in Education* (pp. 135-146).

Perkins, D. (1999, Nov.). The many faces of Constructivism. *Educational Leadership*, *57,* 6-11.

Phillips, D. C. Ed. (2000). *Constructivism in Education*. Chicago, Illinois. University of Chicago Press.

Psychological Dictionary. Retrieved online at www.allpsych.com/dictionary/p.html

Pugalee, D. K. (2001, Summer). Algebra for all: the Role of technology and constructivism in an algebra course of at-risk students. *Preventing School Failure*, *45,* 171-176.

Richardson, V. (2003, Dec). Constructivist Pedagogy. *Teachers College Record 105 (9)* 1623-40.

Scheurman, G. & Newmann, F. M. (1998, Jan). Authentic Intellectual work in social studies: Putting performance before pedagogy. *Social Education*, *62,* 23-25.

School Grades. (2006). Found at www.fldoe.com.

Senge, P. (1990). *The fifth discipline: The art and practice of the learning organization*. New York: Doubleday.

Shapiro, A. (2002). *Case Studies in Constructivist Leadership and Teaching*. Lanham, Maryland. Scarecrow Press.

Shapiro, A., Benjamin, W. & Hunt, J. (1995). *Curriculum and Schooling: A Practioner's Guide.* Palm Springs, CA. ETC Publications

Sheehy, M. (2002). Illuminating constructivism: Structure, Discourse, and Subjectivity in a middle school classroom, *Reading Research Quarterly, 37,* 278-308.

Smith, L. (1999). What exactly is constructivism in education? *Studies in Science Education*, *33,* 149-157.

Suphon, V. & Wolf, P. (1994, July). *Eight Questions Frequently Asked about Questioning*. (ERIC Document Reproduction Service No. ED 373 047).

Tobin, K. (1998). Sociocultural perspectives in the teaching and learning of science. In Larochelle, M., Bednarz, N. & Garrison, J. (Eds.). *Constructivism and Education*. (pp. 195-212) Cambridge: Cambridge University Press

Von Glasersfeld, E. (1995). A Constructivist Approach to teaching. Steffe, L. and Gale, J. (Eds.). *Constructivism in Education*. (pp. 3-15). Hillsdale, New Jersey. Lawrence Erlbaum Associates.

Von Glasersfeld, E. (1998). Why Constructivism must be radical. In LaRochelle, M., Bednarz, N. & Garrison, J. (Eds.) *Constructivism and Education*. (pp.23-28) Cambridge: Cambridge University Press.

Vygotsky, L. (1978). *Mind in Society: the development of higher psychological processes.* Cambridge, MA: Harvard University Press.

Wadsworth, B. J. (1989). *Piaget's Theory of Cognitive and Affective Development*. (4th ed.) White Plains, New York. Longman Press.

Wiggins, G.& McTighe, J. (1998). *Understanding by Design*. Alexandria, Virgina. Association for Supervision and Curriculum Development.

Wilson, L.C., Byars, T. M., Shapiro, A.S. & Schell, S. H. (1969).Sociology of Supervision. 1969. Boston, MA: Allyn and Bacon.

Windschitl, M. (2002, Summer). Framing Constructivism in practice as the negotiation of dilemmas: An analysis of the conceptual, pedagogical, cultural and political challenges facing teachers. *Review of Educational Research*, *72,* 131-175.

Appendices

Appendix A Transcript of Principal Interview

Years As Principal At Southwood: Two

Years as Assistant Principal: 2-1/2

Taught At Southwood: Since 1997

I left for half a year (as assistant principal) to go to a Title One School and I returned as principal. In fact, Leanna and I were in class together when that happened because she was tell me.

Knowing that Southwood is unique, how do you perceive your role as administrator?

My role really is as the lead teacher. I am a facilitator. I am a motivator, a stimulator of thought. When I say my role is the lead teacher and for the whole concept and whole philosophy is that everyone is a professional and everyone is a leader. We are all leaders, some of us are leaders of different things. Some of us have strengths in different areas. We use our talent in different ways but together we are all leaders.

Is it different than when you were an administrator at the Title One School?

Yes, it was. It was a different philosophy. (unintelligible).

When you interview new teachers, do you look for certain training, certain experiences?

Specifically, I look for teachers that are trained well in guided reading. I look for key words such as facilitator, cool teacher, specifically training in any of the New Zealand approaches. I look for key words such as hands on experiences, and then ask the teacher to elaborate, (unintelligible), the action matching the word, creativity, risk takers.

The first interview I had was with a teacher who said she was from Elon College and she said the whole college experience was constructivism.

Yes. That is not common.

I went on a recruitment trip to Michigan and Wayne State is the same way.

Let's say you hired a new teacher, either in county who transfer in or new teachers, do you have specific training or inservices in constructivism?

We have a beginning teacher program and my literacy coach, myself and my curriculum resource teacher get together each year to design what we need to do better. The new teachers will tell you, I hope, that they feel supported yet challenged. That is always a fine line because a brand new teacher wants to know, what do I need to do and how do you want it done. My first thing that I share with them is that my role is not to tell you how to do something. My role is to help you see what needs to be done and help you design the best way for you to get it done so there is not a one size fits all approach and there is flexibility in how they do it. That is connected to the training. Specific training, even in curriculum, here are the benchmarks that need to be taught, how are we going to get the kids there. How (unintelligible) congruent is our philosophy. Are we being the autocrat in telling you here is how to do this, you carry/borrow ones in math and this is how you do it because I said so or what other approaches can we take to get the kids to understand that. When, I say the what, the how and the why, that it is just applied from all of the different curriculum.

How do you support and maintain the constructivist approach? That assumes that you do support the constructivist approach. So, assuming that....

That is the probably biggest challenge when you have got new folks in and people just coming and going and (unintelligible) but how do I do it. I provide two pull out days per year per team where substitutes or hired teachers come, meet and talk about different curriculum areas that are in need of attention. To support the constructivist approach, approach to what? Approach to teaching? Approach to learning? So that is kind of embedded in those pull-out days.

Professional development I think is pretty congruent with the constructivist approach in that teachers are charged to look at where they need to grow on their spectrum of learning and find

Appendix A Transcript of Principal Interview

areas and group together with folks that have similar needs, that have similar desires to learn in certain area. Again, there is that teacher being the lead learner and taking charge of what they need to know.

Classroom walk-throughs are another way for me to get into the classroom to see what is being accomplished. It comes a lot from pull-out days and professional development. It is continual and it is constantly changing gears so that when the district's curriculum changes, we need to change and that is where we are now with science and social studies. Some people just want it, just give it to me and let me do it. But, it is the process of looking at the changes.

I don't know the mobility rate at Southwood?

About 26%.

Knowing Southwood is unique in the approach, new kids coming in, parents coming in, how do you assimilate them into the curricular structure at Southwood?

They just enter and they are a part of it. Depending on the background experience of some children, it could be a challenge for them and it could be a blessing. (unintelligible) coming from. Teachers just naturally engage them in the curriculum. I do not find much of a difficulty with assimilating them because the teacher's job is (unintelligible) that child's strength which may be very different from the report card or the opinion from the other school on what the child's strengths were because of the approach. It is continuous assessment of that child.

That kind of (unintelligible) of these (unintelligible), especially parents that come from a school with textbooks and so forth to come in and no textbooks are assigned.

They have textbooks in the class. That is something that I correct teachers with. We have textbooks, they are utilized, they are a resource, as well as many other components. It is the base. Not every child can learn from a textbook. They have different intelligence and we have got to use a child's strengths to help them learn. It may not be presented in a textbook. It may look like

more an inquiry science lesson. It may look like manipulatives on the floor with the kids moving around and counting (unintelligible).

So the textbooks you have are really used as a resource, seen as a resource.

Correct. It is just another resource.

Appendix B Transcript of K1

Name: Tape K1 Grade Level: Kindergarten

Total Years Teaching: 22 Years At Southwood: Six

What is your understanding of constructivism?

My understanding of constructivism is that the children are constructing their learning whether it be reading or writing or just discovering about the world about them. There is that inate curiosity that leads them to learn and wanting to learn more.

Did you have specific training in constructivism: If so, what?

No, not as constructivism. From what I learned here, I compare it pretty much with what kindergarten is anyway which is the children are learning through their play and it is very developmental. I see the children as just in their play time, whether it is inside or outside, specific math centers or learning centers, they are going to what they need. They are playing around. Whatever is inside them, they are working at learning that. It is pretty similar to all of my background in kindergarten but it was not specific constructivism.

How would say the constructivism approach is maintained?

By hard work. You are constantly talking with peers to get ideas, how things may have worked in their classroom or did not work, a lot of networking between your peers, a lot of use of the internet and technology and a lot of being able to take the risk to let the children go.

Would you describe your classroom as a constructivist classroom? If so, how?

Yes, very developmental.

What do you see as your role in the classroom?

As a facilitator. I do give them skills that they need to go ahead with their learning through

Appendix B Transcript of K1

strategy such as think aloud, having them think pair-share. The strategies I use are there for them as tools. So, where they take it is that they are constructing their own learning. There is a lot of looking and notice, what do you observe, what do you think about that. So, the questioning I use promotes their thinking and it also gets them to start making those questions.

What do you see as the students role in the classroom?

To go ahead and take initiative, to be a risk taker, to understand that it is all right to make mistakes. We learn from our mistakes. There is a whole world out there and let's get learning.

What is the greatest challenge you feel you face in a constructivist classroom?

Management in a way to let the children be able to do, you have to be able to say "Okay, I am not in charge. They are in charge of their learning." I have to step back. My teacher role over the years has changed because traditionally we were the ones who decided what we were going to study, when we were going to study, and what work we were going to do. I have to step back and let the children make these choices to the point where they are making their choices or problem solving, whether social problem solving, making decisions for the class that I may not have input or I may not want to do but I go along with it as long as it is safe and then that is my other role - to make sure that they have a very safe environment and a nurturing environment.

How do you assimilate new students into the culture and process of your class?

When they first start out, I make the class a part of welcoming them and we will do some activities that go back to building community and we talk with the kids and the children talk among themselves how it would feel for somebody new to come into the classroom. Somebody will make sure that the person knows where to go and what to do. I am constantly talking with the child. I ask them how they feel, whether they miss somebody, that's it is okay. Pretty much, there

Appendix B Transcript of K1

has not been a problem with them adjusting. Except, sometimes some of them are used to being right and wrong and they are used to doing paperwork. They love it but it is a little bit hard to get used to. They are afraid to take that chance. They want a right or a wrong.

How do you help kids overcome that?

Every little attempt I apply that attempt by setting an example that I too make mistakes and it is okay and everybody else in the classroom knows that because they will say,"That's okay, you can try again. That's how we become better by trying."

Do your students work in groups? If so, how are groups determined?

They work in large groups, small groups, and as individuals. The children decide which group for the most part. I do not have a rotation of centers or anything like that. They decide where they go. They do have a limit of four to work safely.

How much, and when is direct instruction used in your classroom?

There are times that I am at the front of the classroom to start it, but then I let the children go where their needs and interests. I may have the reading that we will do (unintelligible) during our shared reading time but they are going with what they are noticing in the print. "Oh look, Mrs. _____ I see those two have the same letters." They go ahead with their learning. I am just instrumental in getting it started and seeing that we go within our time.

Describe the role of student discourse in your classroom?

They talk a lot which is excellent because I have a lot of second language learners. If you are quiet you do not learn much if you cannot talk it out. Because there is more thinking going on when they are vocal which is also another hard part which we talked being able to adjust to noise. It is a constructive noise. It is not an out of order noise, but it is a noise level that you have to get

used to.

Is the discourse mainly student to student or student to teacher?

Most of it is student to student but they still come up to me and say "Mrs. _____ can I read to you.?" I will see someone going over and say "Hey, look you can find that word over there. We read it in that book." So, I would say more child to child and I am just there keeping the safety going and making sure that things run smoothly. There are times when children have to work out problems but they are the ones who have to come up with the choices and how to solve their problems.

Appendix C Transcript of K2

Name: Tape K2 Grade Level: Kindergarten

Total Years Teaching: First Years At Southwood: One

What is your understanding of constructivism?

I graduated from the University of Florida and their whole education program is kind of constructivist. I interviewed at Southwood and they actually do what I was reading about. I think constructivist is a hands on approach. The kids construct their learning through their own experiences. They build on their prior experiences. The teacher is just the facilitator in that. You set up your activities so the kids can gain their own experience from it. You set up activities based on their interests and what they are interested in learning about. They gather something from that activity that benefits them or is meaningful to them.

Did you have specific training in constructivism: If so, what?

Yes, at UF. During my internship, we did a lot of looking at constructivist versus how schools normally do things with worksheets or tests. The constructivist area is not worksheets and tests. If it kind of assessing kids on their own level. At UF, we did study a lot about it and read a lot of books based on it. It is neat coming out of school to actually be able to apply what you studied.

Would you describe your classroom as a constructivist classroom? If so, how?

I would. A lot of my other core group they laugh because it is like you have a new teacher being excited about everything. It is cool to see constructivism happening inside the classroom, especially here at Southwood we have so many different cultures. Not everyone comes in your classroom knowing the same things or having the same experiences. When you see something click in your kids, we were talking about this and "I saw that on TV,", or "I know what you are

Appendix C Transcript of K2

talking about, it is kind of like," You see the wheels turning in their head. It is neat to see that in your classroom.

What do you see as your role in the classroom?

I am the facilitator. I sit back and observe them doing the talking. They are explaining why they are thinking that way or how they came to that decision or choice. If we are doing a math activity, they are explaining to me how they got that, why they think this one is longer than the other one. When we are reading in the book and we go through our picture logs, they tell me what they think is happening in the pictures just by them looking around. Different people think different things because they experienced different things in their little world. For me, it is not necessarily my job to say that is wrong but to say, "why do you think that way," "how did you come to that," kind of get them thinking, "how did I get to that," and search for the answers themselves rather than me telling them, have them think their way through. So, being a facilitator is my role.

What do you see as the students role in the classroom?

They are the thinkers. They are the ones who are giving me what they want to learn about, giving me what their interests are. In kindergarten we do a thing, Kid Writing, where they come in and they write about anything and everything. They write about anything they want to write about. That is their time to sit down and write. At the end of the lesson is when I call a couple people up to share what they wrote about and that is where I pull my mini lesson from what they wrote about or what they are doing. It is kind of me being able to see what they want to talk about and what they are writing about, what they are thinking about and me being able to apply it our standard and what they need to be learning.

There is sometimes a disconnect between what we learn at the college level and what we do in

classroom. So, being a first year teacher, what type of support or maintenance have you gotten in implementing the constructivist approach?

I get support from the school. Whereas I am able to not necessarily have the worksheets to show the principal what the kids are learning. That is the support you have. You are at a school where they understand that you are not going to have a worksheet but you would have maybe pictures of student doing that. It is easier if the administration understands where you are coming from. So, that is ideally what you would read in those textbooks but it is kind of difficult when you think about it with parents. For a lot of parents, this is the first time, especially in kindergarten, where it is like "what do you mean they do not have homework," "they do not come home and read books." From textbooks, you think in your head, what a society it would be if everyone was doing the constructivist thinking. I guess the support is here within the school but I am not sure the support is there within the community.

Other people have mentioned The Breakfast Club for new teachers or the study groups. How beneficial have those been for you?

The Breakfast Club has been extremely beneficial for me, especially first year, not knowing, they bring up topics, sort of like open house. I have never really sat down with a parent and had a conference and so "how do you say this to them without feeling intimidated." Or, even like an first-year teacher you would feel intimidated your first parent teacher conference cause you are unsure of what to say, how to say it. They give you those techniques that you can go in and tell them real life. At UF you do not necessarily have that. They do not give you that – this is what you could say. Even like report card comments. I probably spent like two weeks on my set of report cards because I did not know what to say, "I don't know how to say this," "am I saying this

okay," "is this going to be all right," "this is what they are going to have for the rest of their lives on their report card." Little things like that and you think you are the only one feeling that way. Working on a team, everyone else has done this. So they are done with theirs in five minutes and you are working on it for two weeks. At least you can go to The Breakfast Club and see there are

other teachers feeling the same way that you are and stressing about this whereas your team may not be stressing about it. Your team is there to help and that is the one thing. I have a great team who have been there. They pair you up with a mentor teacher so you can work side by side with Them and plan together. If you have a problem, "I am not sure if this is going well, what do you think." Just little things like that. It is great to have that support with it being your first year. Even with the principal, she has her open door policy which is great too where you can go in and say, "I am worried about this," or "I am concerned about." I think that is also a great support system too. They also have pull out days I am not sure whether every school has it - where you have one for new teachers and that was neat. I actually got to go through other kindergarten classes as it was happening. Whereas, my core group, we are usually teaching at the same time so I do not know what their shared reading looked like as opposed to mine. It was great for me as a new teacher to be pulled out on that day and I could actually walk around and see, "this is how Romodoes it," and "this is how Ms. C. does hichibachi "okay I got it. This is what t is supposed to look like" That was a good opportunity for me and a good experience to have. They also do pull out days with the whole team and that is also a great idea to get everyone together.

What is the greatest challenge you feel you face in a constructivist classroom?

I feel my greatest challenge is the parents. Getting them to be more educated on the constructivist theory and a lot of parents aren't. They are traditional. We had DIBLS and I had a couple of

parents like, "what's DIBLS. It is nothing but for them they need tests or ..... I feel my biggest challenge in the classroom is the parents and getting them to understand that we may not have homework everyday. In my grade we send home optional homework, nothing like writing or anything. It is like look around the house and say "bed, what does bed start with. It is things they can do throughout the house without having to sit down. The problem is getting parents to think outside of the box. You do not need to sit there with paper or pencil and drill how to spell the

work bed but think when you are walking around the house, have them say words to you and what do you think that starts with. In setting the table, we do not have to do math worksheets but we did have them count out as they are putting down a plate, like real life things and having parents think about that. Think outside the box and not necessarily paper and pencil.

Do your students work in groups? If so, how are groups determined?

Yes. At the beginning of the year I have stronger workers, usually by behavior at the beginning of the year. Students are able to stay on task as opposed to those who have a hard time staying on task. That is how groups are formed at the beginning of the year. The second half of the year I put it by levels. Like at one table, I will have one strong writer and the other will have one strong reader, someone else who is really great at math. That is usually how. You also have behavior that plays a role in it too.

How much, and when is direct instruction used in your classroom?

In my classroom, direct instruction is mostly the small groups, those individuals who may be struggling in a certain area, that the majority of the class. I would pull out the kids who are struggling, say in writing their name or whatnot and sit one on one. That is the direct instruction that I am giving them. Our class does really well as a whole group figuring things out, making

their own choices. Direct instruction plays a very small part in my day.

Describe the role of student discourse in your classroom?

I think that is a big part. Because I am the facilitator in my eyes, they play a huge role in getting discussion going or sharing experiences. I also think when we have other kids being able to teach other kids. Like, maybe I said something that one student did not get but their classmate explains in a way that I did not think of. I think it plays a huge role in the classroom. Just talking, having conversation, discussing. Getting the thoughts rolling. Thinking aloud. I really encourage

that. Then you have your classroom being quite talkative, but I think that is okay. Especially in kindergarten.

Is there anything you wanted me to ask that I did not ask or anything you think I should know?

Not anything I can think of. I thought that was a great question about the textbooks towards inside my classroom now.

Appendix D Transcript of 1A

Name: Tape 1A Grade Level: First Grade

Total Years Teaching: 5-1/2 Years At Southwood: 5-1/2

What is your understanding of constructivism?

My understanding is the way the children learn is by us giving them the tools and them coming up with their own understanding and then really getting a full grasp of the concepts we are trying to teach.

Did you have specific training in constructivism: If so, what?

Not really. I learned by doing and by my fellow teachers and at my internship there was a school kind of set up like this one where I learned through my internship.

How would you say the constructivist philosophy is maintained from the teacher side?

By making sure that we are making it hands on and active learning and making them a part of the curriculum instead of just teaching the curriculum to them.

Are there in-services or professional training or anything?

We do a study group where we decide something that we would like to learn more about and we work with people that want to learn the same thing we want to do. I think that helps us by focusing in on something we would like to learn more about. We are open to go to in-services but it is up to you if you would like to go.

The study groups, is that a set thing?

Um, huh, we meet once a month. It's a schoolwide thing..

Would you describe your classroom as a constructivist classroom? If so, how?

I would because I try to be a facilitator and ask the higher level questioning for them to have better understanding. I just to try to make them active learners and not necessarily always having

Appendix D Transcript of 1A

a lesson in mind. If they start asking other questions taking it to where they want it to go.

You described your role as the facilitator. Talk about the role of the student. What do you see as their role in the classroom.

I see them being active learners and I see them leading the instruction. They are a very vital part of the classroom because without them we would not have the classroom discussions that you would like them to have.

When you say they lead the instruction, what do you mean by that?

When we are starting to study a curriculum, like you are starting to study life cycles of butterflies, getting their prior knowledge of what they understand of it and getting them to ask the questions and us doing the research to figure out the answers to their questions. It helps make learning fun for them because they are learning about things they are interested in.

If you think about the curriculum content and then as you said part of the student's role is to lead the instruction, how well do you need to know the content.

You need to know it very well because you need to be prepared for wherever they might take it so you need to have a very thorough understanding of what you are teaching them. Sometimes, if they ask a question and you do not the answer, you let them know that that is somewhat we can find out together and find books and things to help answer the questions they do have.

What is the greatest challenge you feel you face in a constructivist classroom?

Making sure you hit all of the benchmarks. Because you really try to go in depth on the different curriculum you are doing so they have a greater understanding and the benchmarks are so many. So, making sure you do touch upon all of them while you are getting into the content.

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How do you balance the idea that kids as you say want them to lead the instruction.

Sometimes you have to lead it. Sometimes you have to do it so you try to figure out a lesson and then you kind of lead them into where you want to come out. I mean, you let them lead but then

you kind of guide them into where you want them to go with it asking leading questions and trying to get them to come up with what you .....

Direct instruction in the classroom.....?

I find that when you introduce the lesson, when you start it out, that I do not necessarily always do a direct instruction because I kind of lead. We start the discussion and I have them do definitions of what they think it might be and then do examples and non examples, do an activity. So think direct instruction starts at the beginning but it kind of leads into them coming up with their own definition of it, running through the examples and non examples.

Knowing that Southwood is unique, when new students come into your class, it is unique for them. How do they get assimilated?

I usually give them a buddy, someone in our room that will take them around and show them the important things. The kids have such a routine and they kind of know exactly what they need to do and they know how to do it. So, giving them a buddy that can help them learn the routine, try to make them a welcome part, usually do a little bit of sharing, like my kids usually go around, introduce themselves, that child is introduced. I have the kids tell them the most important things they think they should know. We go over our classroom agreements that we set up at the beginning of the year so that it is a reminder for my kids but it is also an introduction for that child and then giving them a buddy that takes them around pretty much all day and has them showing what to do, where to go, where to put things.

Appendix D Transcript of 1A

Do your students work in groups? If so, how are groups determined?

Yes. It depends on the situation. Sometimes when it is guided reading group, based on their level of guided reading. During math, it is a skill that if I see a lot of them are having a difficult time with it, then I pull them together on that. But sometimes when we do our math games, I mix it up,

the higher, the medium, and the lower kids, and get them mixed up because that will help them in learning the game instead of only putting the high with the high and the low with the low and mix it by their level. In writing, it is just a mixture of different standards, kind of pull them back in groups that I just put them with and they kind of get a little bit of everything that is going on with their group. It is not specific.

How large are the groups?

It depends. I try to keep them small. When I am working with them, between four to five, just depending. Sometimes it gets a little bit larger just because you do not have enough to make another group but I try to keep them small so they have more one on one interaction.

Tell me your understanding of active learning?

I seem that as being them talking with the other children and really like when you hear them playing the math game then start using the terminology that you would like them to use and often you hear them teaching the other children that are struggling with it and being that helper they could be. I see that as being a talking environment where they are really discussing what is going on. Trying to keep first graders on track on discussing what is going on is somewhat hard, so you have to kind of walk around and monitor and make sure they are really staying on focus. I hear someone talking about this weekend. No, we should be talking about the math and really get them talking what they are learning about.

Appendix D Transcript of 1A

That kind of goes to the role of student discourse. Do you encourage a lot of student-student talk or student-teacher talk?

I do. There is a time and place for it. Sometimes I say at the beginning of writing, everyone take about ten minutes to really just think and internalize what they want to write about and after that you can discuss. But, I want you to have some quite time for that child to do their own reflecting of what they think they might want to write about. But, I do recommend them talking to each

other, bouncing off ideas and working together. They are pretty much in groups per se all day long as they sit at tables with like four children. This is my first year in first grade so they have gotten to choose where they want to sit everyday so their group changes on a daily basis of who they sit with.

That is the last of my formal questions. Do you have any comments that you would like to share that I did not ask?

I think Southwood is a great school. I have learned a lot. It is the only school I have been at but I have learned a lot. It has been really neat. I will just share a bit. I moved up with my class this year. I have been a kindergarten teacher for four years and I moved up this year to first grade and that has been amazing because my kids have stuck together so I see a lot of them doing the talking and they are really comfortable with each other so they do a lot of that. It has been a great experience.

What is the plan beyond this year? Will you go up to second grade?

I am not going to go. My kids would love me to go, but I am going to stay in first grade. I started in first and kind of wanted to go back to it. I am getting readjusted after being in kindergarten for so long and I like the camaraderie, like the team work, on the teams here. Each team that I have been on, we have worked really well together. It helps with the constructivism having a supportive team and people you can go to when you are having a problem and making sure you are hitting the benchmarks, you have got other people that you can talk about that stuff with.

Appendix E Transcript of 1B

Name: Tape 1B Grade Level: First Grade

Total Years Teaching: 13 Years At Southwood: Six

What is your understanding of constructivism?

Constructivism is where students are learning through questioning and asking and through their curiosity and making meaning for themselves.

Did you have specific training in constructivism: If so, what?

No.

How would you say constructivism is maintained here at Southwood?

I think it is different in every classroom. I think it is maintained through the type of curriculum that we develop at the school and going back and revisiting that. I do feel that to really truly understand constructivism and because there is a turnover that it needs to be visited and really talk about it. I think some teachers might not understand and they are actually really doing it in the classroom but they may not know what that is. Articles are handed out and I think that helps to understand what it is. Since I have been here there has not been any training per se like official training.

You are in a unique position because you taught at another school but came here six years ago. Prior to coming here, what was your knowledge or experience with constructivism?

Really nothing. I am an avid learner. I am always reaching out, taking classes, continuing my education. I believe that is why I fit into this mode because I did not really know that I was a constructivist teacher until coming here and knowing what that was and saying, "okay that is what you see in my classroom." I did not have any formal training outside of that. This is what constructivism is or anything like that and I think the school draw teachers like that, that want to

Appendix E Transcript of 1B

be (unintelligible).

What do you see as your role in the classroom?

Facilitator. Sometimes a leader. Sometimes an observer. It depends on what the students need at that moment. The first grade is a difficult year to really develop or not be as directed as you would in the older grades. Kids really at that age are having a hard time knowing what they want to learn. You have to really guide so you can think of me as a guidance counselor as I guide them into their learning.

Would you say your classroom is a constructivist classroom? Why?

Yes. Because I give them the foundation or basis and allow them to go and explore through their multiple intelligences and providing them an opportunity to lead on their learning style. We will go in and we direct and we teach and then I need to redirect and reteach pulling them into smaller groups, large groups, allowing the students that are ready to expand their learning, allowing them to go and extend their learning for them. I do try to look at the whole. With standards, you are kind of looking at parts. With constructivism, they need to see the whole and loss of whole and understand the parts. They have to understand there is a whole and there is something out there. That will be their stepping stone. I talk to my kids a lot like this. "You know, this is the first step that we are going to do but once you learn this step, it is going to be this and from this to that and eventually you are going to be working on the outcome."

What do you see as the students role in the classroom?

Active learners. They are questioning. They are exploring. They have a lot of control. "This is what I want to do. Is it all right if I do it this way." "Yes it is all right if you do it this way." Really I want them to be able to think about their thinking. We talk about that a lot.

Appendix E Transcript of 1B

What is the greatest challenge you feel you face in a constructivist classroom?

Standards and standardized tests. When students are in charge of their learning and they want to take that somewhere and it does not necessarily fall under that standard, that set standard, you are

supposed to cover that gray bubble. Standardized tests (unintelligible) whether you want to or not. (unintelligible).

Do your students work in groups?

Yes, I have them work with partners and triads or groups of four, individually.

How are the groups formed?

That all depends. They can be grouped heterogenously. They can be grouped homogenously. I let them choose their own groups. Sometimes their groups are based on their interests. It all depends what we are covering or what we are doing.

How much is direct instruction used in the classroom?

It is used daily but not the majority of the day is used to give direct instruction. A lot of mini lessons to get them to think about where to go and to guide them in what (unintelligible).

What is the role of student discourse in you class?

There is a lot of that happening. It is not a quiet room. My students are free to ask questions, to challenge and there is a lot of discussion in all areas. They are not afraid to ask. They are not afraid to say they do not understand or catch me when I make a mistake. It is very open classroom where they are free to ask questions.

Did you have any comments you wanted to make or questions that you thought I should have included but didn't included?

No. I think when you asked about the training or what is being done and how our school maintain that - I think a lot of that happens within the teams. The teams are really good in taking a new teacher under their wing and showing them where to go and what our philosophy is and what out beliefs are. So, that is how I would say that constructivism is maintained in our school, is through the teams and not necessarily through all staff training or all staff reviews. It is the teachers that have been here for a while that say this is how we do this and why we do this (unintelligible).

Appendix F Transcript of 2A

Name: Tape 2A Grade Level: Second

Total Years Teaching: 22 Years At Southwood: Since it opened, 9 years.

What is your understanding of constructivism?

As a teacher, my ability to provide what it is that children need, whether it is materials, questioning, classroom environment to construct their learning. It is pretty much a discovery way of doing things. You take prior knowledge and build on it. Take it through the steps and guide them through the steps and knowing ahead of time of course where they need to be but letting them discover the answers have the "Aha" moments along the way.

Did you have specific training in constructivism: If so, what?

Pretty much what has been onsite that Leanna brought to our school. I think constructivism is a lot of things I feel fall under that.. Throughout Orange County, my experience in all of my 22 years have been here in Orange County, I have training on how to teach mathematics without so much using a textbook but building prior knowledge and problem solving, that kind of thing, which I think falls under constructivism. So it has been kind of constructing my own learning, it was not under the title of constructivism but it all falls under that learning holistically and looking at the child as a whole and all of those things fall under that rather than just right out of the textbook. Under the title of constructivism, just being at Southwood and what Leanna has brought to us.

How is that philosophy or that approach maintained?

It is very strong. It began with the interview process.. When the school was opened Leanna came with a vision, of what she wanted Southwood to be. Anyone who has come aboard has been given that information. A lot of training has gone on to help these teachers come aboard but those

Appendix F Transcript of 2A

teachers, if it is not working for them, move on elsewhere. So we maintain it because

the teachers that stay here believe in what we are doing, have the same philosophy and are really learners themselves. Our new principal who is also trained under Ms. Isaacson she keeps this very much alive but it is not her torch, it is ours and part of what we all believe so it is easily maintained.

Did either Ms. Storch or anybody else have set training or inservices?

Yes, we have, again, we do not call them constructivist training, just because that is kind of what we are, but yes, on a regular basis we do study groups that are teacher selected, things we are all interested in that will impact the classroom under that philosophy. So, we do that once a month. We have team meetings where we discuss other issues that are going on and those are scheduled. That happens once a month. Teachers that are new on board have morning meetings where they deal with different aspects of things that are going on. So, we get lots of training. New teachers also have mentors who help guide and train along the way.

You are in a unique position to answer this having been in another school before coming here, prior to Southwood, what did you know of constructivism?

To be honest with you, I had never heard the word. But, once I did, I felt that is what I do anyway. I have been at six different schools in Orange County and was fortunate enough to be able to teach in that way. Obviously, I do not teach now as I did when I started teaching. Obviously I have learned something and hope to continue to do that. What I mean is that was my philosophy from the get go. So it was just a matter of being able to find opportunity to build on that and grow. So it was like coming home when I came to Southwood but certainly I have done a lot of learning around here as if the leader believes in constructivism then you are not trying to

swim out there on your own and find the information on your own but you have someone leading the school – that is a tremendous benefit for everybody and has been for me. To have peers who are thinking along the same lines and, therefore, pose the question, ponder the question, figure it

out and then come back – so we do a lot of reflecting amongst ourselves and that has been very beneficial to me.

Prior to coming to Southwood, throughout the county, I have been able to go to a lot of workshops that have interested me. At that point were thought of as non conventional kind of things, teaching outside the box. So those things have always been provided it was just more me searching for them on my own or a small group of people that just really believed that children need to and can construct their learning. We met outside of school as a group to discuss strategies and pose concerns or problems we encounter. We did this on our own time once a month.

Would you describe your classroom as a constructivist classroom? If so, how?

Absolutely. I provide a risk free environment where the kids are free to ask questions, explore it. I consider myself a learner and make the children well aware of that. I make mistakes. I do not have all of the answers but we figure it out. I provide as much material as I can. I think this is a wonderful school where a lot of materials are provided anyway, but I have over 5,000 books in my classroom of my own so I try to provide whatever is out there that I can bring in. If I am not sure, let's figure it out. I model that and provide time and opportunity for them to do that. I also provide lots of real world problems for them to solve.

What do you see as your role in the classroom?

My role is to ask the right questions, to provide whether it is literature, manipulatives, whatever is

needed for an experiment, to provide the material and whatever insight I might have to help them to reach the next level of questioning. Certainly it is definitely not to pour out information for them to put into their brain and somehow make much of it. My role is to just provide it for them and help guide them so that they actually learn it and not memorize it. My role is to help the students make connections and build on prior knowledge to extend their learning.

What do you see as the students role in the classroom?

The student role is to come to school to be ready to learn, to be a thinker. My role is to help them to be thinkers. I throw those questions back. One of my questions I ask all of the time is, "How do you know," and for them not to say "I don't know." I tell them that is not going to work. I need to know how you know. Their job is to learn to verbalize what they know whichever way makes sense to them but it needs to make sense somehow. Their job is really to be ready to learn, to be willing to give it a shot.

You were talking your role as teacher is not to dispense a lot of information. What is the role of direct instruction in your classroom?

We have a very interesting population here. We have many, many languages, like 30 something languages in our school, and many different cultures which is a wonderful thing. The problem we have with that, of course, is that they all have different experiences. So, for me I have to get to know my children well. So I try to build a real rappoport with them, to get to know where they are coming from. So, I need to direct as far as vocabulary - a lot of vocabulary needs to be taught here at the school because

many of them speak a different language at home or their parents do and so the language base is different - to provide vocabulary, provide the information I feel they need to know and then fill in

the holes. When children are learning they are building that knowledge, there are holes because they do not always catch some things that need to done so it is my job to make sure that I directly teach a piece they may be missing and then they go, "Oh okay that makes sense now." When they put what they have learned and what I have to offer so they can is a link to the next level of knowledge. Direct instruction is the base from which higher learning and thinking can take place.

Are the kids involved in active learning and how would somebody see that?

It may be researching information. Right now, we are in the process of publishing some books and the children having been writing. First, they researched animals. We have a lot of animal benchmarks in our secondary curriculum. They have done the research so you will see piles of books and them kind of sitting in the middle of room and searching for information and then having to write in their own words so you will see dictionaries and thesaurus because they are trying to figure that out and helping each other. You will see some editing of each other's work, that kind of thing and they are all at different stages. I have some children that are actually writing the book and others are still just doing some research. It is kind of the midst of books and things all around them. You will see that they are actively learning. Of course, when we do math, we use so many manipulatives and we are measuring on the floor and tracing each other and doing all kinds of things. They are usually not sitting very long, at least not at a table. They can work anywhere in the room they want to, as long as they are working. I don't care if they are sitting in a chair or not.

Describe the role of student discourse in your classroom?

We do a lot of talking. So, it is usually not very quiet, but I tell them if I am on the other side of the room and I can hear exactly what you are saying, you are talking too loud. As long as they on

task, I think children learn from each other and they do not always have to agree but they have to agree to disagree, prove your point. I think that it is important that kids talk. Certainly with me, I

do not have all of the answers and they can correct me, as they do many times, I have no problem with that. I try to provide a risk free environment so we need to all be able say what we feel, be accepted and respected by everybody and learn from each other so there are a lot of conversations going on.

What is the greatest challenge you feel you face in a constructivist classroom?

The greatest challenge is time. The time factor for me to ask all of the questions that come up and to have time to do what the children are doing, to talk to my peers, to search onsite or offsite, just to find the answers and discover the answer for myself, time is the biggest factor. The other issue is also the different levels we have within the classroom, which is a benefit in some ways because you have kids who are helping each other and are learning from each other, but we have kids who are way above grade level and also have kids that are really struggling and then everything in between. So, trying to make sure that I am meeting everyone's needs and help everybody move along their respective curriculum.

Do you have any comments or anything that you wanted to say that I did not ask?

No, other than I am thrilled that you are doing this because hopefully more schools will start doing these kinds of things. It makes it exciting. It is an exciting place to be.

Appendix G Transcript of 2B

Name: Tape 2B Grade Level: Second

Total Years Teaching: Three Years At Southwood: Second

What is your understanding of constructivism?

Constructivism, I believe, is a lot of hands on activity where the kids are getting involved. It is problem solving where they are solving problems in the class room that might be able to be used in the real world. It is asking a lot of higher level thinking questions where they are having to ask why and not just yes or no questions. It is an ongoing learning process. They are consistently building and finding new things, for me and for them.

Did you have specific training in constructivism: If so, what?

I do not believe there is specific training on constructivism. I think that it is again an ongoing thing. The kids are learning while you are learning too because they find new things and that takes them in a whole other way. I did go to UCF and they touched on constructivism and how it can be used in the classroom. There is nothing really formal here at Southwood. Until you get in the classroom and start, it is kind of an ongoing learning thing. You learn as you go and you learn your stuff as you go.

You taught for a year before coming to Southwood..did your teaching style change?

Yes, definitely.

Why did it change? Was it because of you wanted to change or Southwood said this is the way we do things here?

Well, I did not totally agree with where I was and that is why I kind of left, too. I found this school and saw their philosophy and the way they teach. Before I was more of whole group out of basals, just textbooks. I like this kind of teaching. I learn

Appendix G Transcript of 2B

better that way when I am hands on visual. Its easier for me to teach because I learn that way too. They are getting tactile. So, it is different. They are working in small groups. I am facilitating. They are learning. They are doing the learning and I am just helping them lead it on.

What type of maintenance support training did you receive as a new teacher coming?

As a support from the school. They have a club for new teachers – it is called Breakfast Club. We met every Friday which helped with whatever we needed to know during that time during the year to help us. That was very beneficial. You also had a mentor that you could to and you met with every Monday. They would help making sure you were doing what was expected in that grade level.

Others have mentioned a weekly or monthly study group?

Yes, we also have study groups that we do which you can pick which group you want to be in if it is something you want to concentrate on. I know this semester I wanted to concentrate on the guided reading aspect of it and reading in the classroom so I did a study group on that. You can pick which one you want.

Is that helpful?

Yes, because you get ideas from other teachers about what works and what does not work and you have primary and secondary so you are seeing what they do in secondary so if you need to know later on...

As a new teacher, were you allowed or encouraged or did you go visit other teacher classroom and observe them?

Yes, I sure did. Not only was I allowed to go and observe, but I also had our reading, CRT and our literacy coach come in and actually model how to do guided reading or how to do shared

reading. Any kind of lesson, wherever being math, I have had them do it in the every subject so that I could see what it looked like.

Would you describe your classroom as a constructivist classroom? If so, how?

Yes, I think it is very inviting. It is very colorful and very bright. We have centers activities where they are working in centers, in groups with different kids. They have a lot of manipulatives all over the room. They are constantly moving around my desk in groups, not in rows or in the floor in a group. They have different stations they can go to working in groups so it is not your traditional rows.

How often do the children work in groups and how are the groups determined?

All day and every subject area. The groups are different every time. It is depending on the activity. It could be I have them working in different levels because another child is low in something and they need that. Or, maybe they are on the same level because.their buddy is on the same level.

What do you see as your role in the classroom?

I am more of the facilitator in the classroom and I see the students as leading the direction of the learning more than me being up front doing direct instruction all day.

What do you see as the students role in the classroom? You touched on this – the student as the leader of the direction of the class.

I might start off often but they are going to take it in the direction they want to.

What is the greatest challenge you feel you face in a constructivist classroom?

Making sure my parents understand that it is not just games and activities. They are actually learning. Sometimes the parents say, "Where is the homework," "Where is this," "Where are the

papers," "Where is the work book." They think that if they do not see that material or going home with the workbook, they do not feel their child is learning. It hard sometimes for certain parents to understand that there children are actively leaning without seeing homework and paperwork. And, making fun activities. You have to be creative too.

How much, and when is direct instruction used in your classroom?

It is used, but very little. I might give a ten-minute mini lesson just so the kids can understand the concept and then go apply it. So, that might be ten minutes in every subject or just to explain one thing so they understand the concept. They have to understand the concept in order to do it. So, they are very short.

Describe the role of student discourse in your classroom?

It is ongoing. If the kids are working in groups, they are talking to each other. This kid might learn something but they are talking to me so I think it is an ongoing thing. The kids learn from each other. They find things. That is why the groups are always different so those high kids will sometimes help the low kids and kids on the same level learn too.

Is there anything I did not ask you wanted me to ask or anything you would like to say or think I should know.

Not off the top of my head.

Appendix H Transcript of 3A

Name: Tape 3A Grade Level: Third Grade

Total Years Teaching: Two Years At Southwood: One

What is your understanding of constructivism?

I would like to think that in my classroom I actually give my students the ability to construct their own meaning of what they are learning in the classroom. Instead of me telling them verbatim I get them to be involved in the lesson as well. Having them make connections to their personal experiences, as well as the classroom experience so they are able to build their own understanding of the concepts. I think that is the way I teach in the classroom. Also, constructivism gives them a chance to question themselves, predict, analyze their answers, compare with others

Did you have specific training in constructivism: If so, what?

Not specifically. I remember in college a couple of years ago I had taken that were more of a constructivist approach.

Let's even go back prior to this year at Southwood, what was your knowledge and experience of constructivism?

Well, I taught kindergarten in a school that was basically free of textbooks but even before that there were other schools that tried to do something completely different.

Would you describe your classroom as a constructivist classroom? If so, how?

Yes, see above.

What do you see as your role in the classroom?

As a facilitator.

What do you see as the students role in the classroom?

They take more of an active role. They take a little bit of information I provide them and build on

Appendix H Transcript of 3A

top of that. So, they are more of the active learner, more than me just standing up there lecturing.

You mentioned something about standing up in class and lecturing. How much time do you spend in what I would call "direct instruction?"

I would say about 15 minutes for each topic. Sometimes even less than that before they branch off into their own thing.

What is the greatest challenge you feel you face in a constructivist classroom?

I think the greatest challenge is trying to get the students to understand the concept of questioning and working with others because a lot of my students just want to work independently. I use group work every day for every topic. At the beginning it is hard for them to relate, "Hey I can actually work with someone on something." That is a challenge. Not having textbooks can be a challenge as well.

You mentioned kids working in groups. How are groups determined?

A lot of time when I do the seating arrangements, I specifically put one of my higher ones with a lower one so heterogeneous grouping is what I do. I also have a little chart that I made for math and reading so I know I can pair this person with this one. A lot of times that works.

What is the role of student discourse? You mentioned about getting kids to work with each other....does the student talk to student or does the student talk to you or you talk to the student. What is the student role?

They do not really talk to me as much. I merely go around and observe. I provide higher level thinking questions all the time for them to work on in groups and I go around to monitor or stop and ask a question here or there. We are conversing and communicating all the time not only just me as a teacher and them but among themselves. They really talk amongst themselves a great

deal of the time.

Did you have any comments or questions that you wished that I asked but didn't ask or anything you want to share?

Just that I think that constructivist schools provide a kind of community sense for the students. I have been in that situation where I do all the talking and they are just sitting there. I like the style here. I think the students get more out of their education when they are actually active.

How is the constructivist approach maintained in Southwood? How is it promoted?

We work in teams. The third grade has ten teachers and we work as a team. We collaborate and work together in that sense with planning. Then you just use your own materials to present to the classroom. I think when Lori hires you in there is an understanding of how the school works. And she trusts that you are able to work that way. We do work a lot with our teams and co-workers.

Appendix I Transcript of 3B

Name: Tape 3B Grade Level: Third

Total Years Teaching: 21 Years At Southwood: Six

What is your understanding of constructivism?

I have kind of worked on the definition of that. I do not know if it really truly be defined in sentence but to me constructivism is when you know your standards and you have the kids take an active part in figuring out a way to learn those standards. We are helping the children by guiding them and they are active learners. They ask questions, they formulate projects, very hands on. They pretty much are the center of their learning rather than the teacher.

Did you have specific training in constructivism: If so, what?

I am an avid learner. I read constantly. I guess my work experience has kind of thrown me into the arena of thinking out of the box. I have never in all of my years with the exception of the first two years of my teaching I have always been in schools and studies that require me to think outside of the realm of traditionalism, whether it be a school that works in a huge pod system. I have taught in a school that had K5 in one room with 100 kids and four teachers. You have to think out of the box there. I have been in schools that have not been textbook driven so I have to really rely on resources and collaboration to work out unit studies so I think it has been a learning curve of 21 years but I have been fortunate enough to be in situations and also have developed relationships with people such as Leanna. I worked with her closely here in the office. I was the CIT here at school for four years and chose to go back into the classroom because I missed the kids. I just absorbed from her and from her experiences. That has really taught me some things that I have used in the classroom.

Since you taught for 21 years, the last six years here, what was your experience of

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constructivism before you came here?

I had three years that I taught at a very nontraditional school, Celebration School, I do not know if you know about it. I was on the ground floor of that school and it was very

outside the realm of traditionalism and really forced us to look at things in a different manner. We ran into a lot of crossroads there because a lot of our parents and children came from traditional schools and a lot of private school situations so we had to do a lot of parent training. I got a lot from that experience. It helped me redefine who I really was a teacher. Prior to that, I had seven years in a school here when I first arrived from Boston that had an unbelievable administrator, very similar to Leanna, where we did grouping. We did multi-age grouping. At first when you get into that you are all over the place with trying to come together with (unintelligible). The crux of everything I have done I think has been the collaboration. I have never taught alone. I have always had a team with me. I felt like I had that support. A lot of stuff going into planning. It is more fun that way too.

Would you describe your classroom as a constructivist classroom? If so, how?

I definitely would. I know the standards that I need to teach but I am not a lecturer. I know the target. I am guiding the children to get there but I am noted for stopping and backing up and going deeper because the kids' interests are there. My philosophy has developed into one that says teach the child, not the curriculum. Teach the child to think. Sometimes that means stopping and really focusing on something for a while that really catches their attention.

What do you see as your role in the classroom?

I am the kids' cheerleader. I am their guide. I am a questioner. I am working on that. I think that is something that an educator has to work on forever – to learn how to ask the right questions to

make the kids really dig deep and think. So that is my biggest thing. A guide, a cheerleader, and a questioner.

What do you see as the students role in the classroom?

The students' role is to continue, through my modeling of questions, continue asking questions. Taking initiative. Even at this young age a lot of my kids, because of that I think, will come and say "Ms. _____ I have a really great idea for this." It really tickles them when I say "That is awesome. Let's use that idea." A lot of my philosophy about teaching and the way I teach to the standards of third grade are kids' ideas. Who best to come up with ideas than an eight year old because they know what they are interested in. I built my curriculum on their excitement and their interests.

How do you think the constructivist philosophy is maintained here at Southwood?

I think it is a hard job because we have quite a bit of turnover and we have a lot of new teachers that come to our school. Sometimes new teachers need the comfort of having a more structured environment, textbooks, signs, all of our resources are on the front page, turn to this page, etc. It is hard at this school to transfer that knowledge to new teachers. We have a pretty strong mentoring program at this school. Coaching is a really important thing. Again, I think that we use the buddy philosophy that nobody flies alone. We know, we already said, it takes three to five years to accommodate and customize yourself to a school environment. I think honestly that it might take all of five years here at Southwood. The philosophy that we try to exude is really hard. It is a difficult one. I think people that go elsewhere because we are looking for matches. We are looking for people that have that core philosophy. For new teachers, they have to develop that. You do not come into school knowing what you think you know about teaching kids. The

philosophy is developed. Those new teachers who have a kind of core gut feeling that it is all about the kids and it is kid centeredness that I should be focusing on, those are the ones that have something to work with. They will start gleaning ideas and start mixing with other teachers and that really does help them to develop their philosophy faster. We have had people go out of the

door that say, “This just isn’t for us.” It is hard work. The planning is difficult because it is very resource rich. You need to have those resources and sometimes it takes a while to develop them.

What is the greatest challenge you feel you face in a constructivist classroom?

Two challenges – I think one is the amount of time that we have versus the amount of curriculum that the state of Florida says we have pack into that time, especially if you are constructivist in nature and you like to spend time going deep. I can tell you quite honestly that I probably do not cover everything the way I should because I do stall at certain places that I deem more important and my kids deem more important.

The second thing that stifles me, quite a bit in fact, is the whole testing issue. FCAT has become a monster in the state of Florida. Thankfully, at Southwood it has not reared its ugly head as much although it is still there (unintelligible). Especially at third grade because it is so pivotal and we feel like we are caught between a feeling “Gosh I have to teach these skills,” and it is more like (unintelligible) versus, I want to teach the kids to think. We have benchmark tests. We have all of these incremental tests that come in too. It just can be difficult. I have tried to strike a balance. I need to get my kids prepared. They need to know the format of the test. However, I do not want to make it into this great big giant thing that stifles the creativity of the curriculum. The testing environment can suck the creativity out of the teacher and out of the curriculum if you let it. I do feel the pressure sometimes. Sometimes I tell you, I cave. I hate the four weeks before FCAT. I

hate it. February is the worst month of my year. Because, I know I have to scramble. “I didn’t teach the kids about arrays, or perpendiculars.” I feel like I have to do that and I am just throwing it against the wall and some of it sticks and some of it doesn’t. I feel compelled to do that because what if.... I struggle with that. We all do here. It is amazing. In February the teachers are all saying “I can’t wait for this month to be over.” We want to get back to what we consider real

teaching. Then, you feel a sense of relief, "Oh gosh, now we can start really teaching and learning again." The testing scenario has really done some numbers on teaching today.

Historically, Southwood has done very well in the past six years or seven years.

We have done well. We like to think that we are teaching the kids to think. They are learners. They are thinkers. Because there is more added district mandates, "Gotta to teach this (unintelligible) curriculum because here comes the benchmark test." Will it never end. That is a source of frustration for me.

Do your students work in groups? If so, how are groups determined?

Oh yeah. Many different ways. Sometimes random, sometimes children pick. I like to have them do that because I like to sit back and observe and see how they do with that. Sometimes I will chose groups depending on levels for reading, or math or interests. I really like to mix them up a lot.

How much, and when is direct instruction used in your classroom?

There is a place for direction instruction. The way I have developed over the years and I am still fussing with it and fine tuning it and it depends on your kids too. I do a lot of little chunks of direct instruction. I call them mini lessons that will happen before I let them experience either work in groups or take that and now implement it into their writing piece or whatever. So, many

lessons and little chunks. With an eight or nioe year old you are going to have their direct attention for 10 to 15 minutes anyhow. After that, forget it. It does not work. During reading block and writing block oftentimes I will have small groups come to me, five or six kids, and they work with me in a small group scenario which I find the most effective although I will have them come to the carpet or we will do a ten-minute together thing and they know it. They know that it is direct instruction and there is a certain behavior stance that they take. They know that it is

something that they really need to listen to because I am going to be asked to do stuff down the road. So, I sprinkle it in during the day and mix it up.

Describe the role of student discourse in your classroom?

Well, I think student to student discourse is probably one of the things that I aspire to mostly to get them talking with each other and get them asking each other questions. I find that when I keep the groups small, two to three, I start the year off with pairs (that's all I can handle) and then depending on the children, you can move to trios or whatever. But, I love listening to kids talk to each other. Often times they do a lot of reinforcement of the teaching or they can explain something in another way or they can ask a really good question. Their discourse with me is really important. I always look for kids that are stretching the limits, asking the question that goes beyond that yes or no answer, those higher level questions. We work at that really hard because I try to model those as much as I can for the kids and I make a huge deal of it. I will say, "That was a brilliant question. Brilliant. Can you ask that question again?" That reinforces to them that this was a question that has an open-ended answer and who can answer that. There is no right answer. These are ideas. That is a very important element of the classroom as well.

Was there anything that you wanted to say that I did not ask or any questions that I did not ask that you wished I would have?

The one thing that I wanted to mention about my training – I went back and got my master's degree and decided to go and get my degree after many years of teaching because I had ten years of interruption in my teaching experience (unintelligible) up north and stuff. I went to NLU which is National Lewis University based on small (unintelligible) groups. I got my degree in curriculum and instruction because I have no desire to be an administrator, especially after I worked for years. I love you guys dearly and my hat goes off to you 110%. However, I know my connection is with kids and I know that is where I need to be. That particular experience was very good because you studied a lot of (unintelligible) and it brought it all back. It kind of validated for

me that I was kind of in the right target but just continuing to learn is very important. I think this environment here at Southwood helps us to keep that going, keep the fire going.

Appendix J Transcript of 4A

Name: Tape 4A Grade Level: Fourth Grade

Total Years Teaching: Two Years At Southwood: Two

What is your understanding of constructivism?

Student centered, problem based. Giving the kids a problem and helping them figure out the answer. Very structured inquiry, giving them a problem, taking it step by step through the solving of it.

Did you have specific training in constructivism: If so, what?

One of my classes was really all about constructivism and that was my math class in my master's program. It was because the teacher himself was very constructivist. He though it would be the ideal way to be a teacher. We did everything with manipulatives....kind of like how our TERC is here.

Would you describe your classroom as a constructivist classroom? If so, how?

I hope so. I would like to. Being a constructivist in every single thing you do, I cannot imagine. I am a second year teacher so that is like, "Wow, twenty years down the road maybe I will figure out how to do that." Coming in and getting down to morning work, how is that constructivist? I am not sure but math and reading and those core subjects, I would love to say that yes, everything I do I make it all about the kids and the kids are working together in groups and I am not directly teaching all day long but unfortunately we do have to do direct teaching. So, I would love to say that my classroom is as constructivist as I know at this point to make it.

Go back to that comment about standing in front of the class and giving direct instructions. How much of that goes on the classroom. What role does direct instruction play?

I think it is a very important role, especially so for those students who are less independent and

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need that direct explanation of a concept and then example after example to grasp the concept. Direct instruction happens more, I feel, in my writing because you have to model, model, model, get them on their own. With math, I feel it is so much easier to not have a direct instruction type of setting because you can say "How can we take this pie and split it in half? How can we do that," and they figure all of the different ways. So in writing I feel it is much more direct instruction. In reading, I have a choice menu. I feel that direct instruction is probably a small percentage of the day but I feel like something comes, it becomes a little bit more.

What do you see as your role in the classroom?

Facilitator, I hope anyway. It is a model behaviorally and academically, to model those great problem solving strategies that we work through, keeping the circuits going in the right direction.

What do you see as the students role in the classroom?

Active participant in the process. That is why I struggle with those kids who will let their group members do all of the talking and do all of the thinking. It is always one or two kids over here in that group and the others sit back and listening. Getting them involved, actively involved in the problem. I feel that is their role, that is their job to be involved.

What percent of time are students involved in active learning?

I would say in classroom time involved in active learning, I would love to say 90%. You know, I would say realistically it is probably more 80% of the time that we are in the classroom. There are those transition times and there are those times where we are just answering questions. From the time we walk in when we start our math morning stuff and go right into our choice menu for reading, I feel like we are actively learning most of the day.

What is the greatest challenge you feel you face in a constructivist classroom?

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Tying it all together with the way the school's philosophy is with the way testing in the district is ideal. I am only a second year teacher I struggle with being able to effectively keep kids

creatively engaged in participating in all areas. Also, to be able to not be able to prepare them fully for standardized tests because unfortunately TERC does not, here is the problem, A,B,C,D, which is the right answer. But they have to be prepared so I feel like I struggle with the balance. I struggle with parents understanding what we do, the ungraded report card, is always tough. Because the way we were taught and the way the parents were taught was traditional A, B, C, D. I guess my struggle with the classroom the balance between what we know as adults, having our kid learning in a very different way, and being able to effectively prepare students for standardized tests.

Do your students work in groups? If so, how are groups determined?

Absolutely. I mix them with their levels, reading levels, math levels. I do move them around for math because their math abilities are much different than reading abilities. Pairing up high/low, I found that works for me. They move constantly.

Describe the role of student discourse in your classroom?

This is incredibly important. I call it buzzing. They buzz with each other. They have to talk. I guess this goes back to one of my struggles is getting them to stay focused with their ....., being able to ask questions. I think questioning each other is such a critical thing to teach them. How to ask questions of each other, how to reflect on their thinking, they need to talk about how they solve a problem with each other before I have them write it out for me. Well, tell your neighbor. How did they solve it? Do you want to share with the class? They are talking all of the time. Also, I think the more you focus their talking in an academic way the

less they will be, "Did you order pizza last night?" kind of stuff. That is definitely a struggle to keep it focused. Kids are chatty.

How is the constructivist philosophy maintained in Southwood?

That philosophy is maintained in our curriculum. It is maintained by our staff development and our staff professional development. It started last year when I was part of the Breakfast Club and we would talk about constructivism and what it means. What does it mean to be a non text book school? What does it mean to be a non graded school? It is not only understanding the philosophy but getting into it, understanding it and liking it and promoting it to the parents.

What is the Breakfast Club?

First year Southwood teachers. I think they meet less this year but we met every Friday morning for about half an hour. On top of just talk of school but it is more like, "Are you doing okay?," "Are you remembering to breathe?"

Who facilitates the Breakfast Club?

This year and last year Becky ....., the curriculum resource teacher, and also our literary coach and then Lori.....

That is it for my questions. Is there anything you wished I would have asked or any comments you want to make?

No. Constructivism is so funny. The concept is a funny concept for me to be sitting here when I was interviewing for this job and to hear them talk about "Why did you pick our school?" because no other school has ever really in my small experience has done it like I have seen here but that is only my small experience. It is just great to see all of that ideal stuff that you learn in college and to actually be out in a school working hard to put it into practice, I think is awesome. I am signed on for the long haul with the whole philosophy. I think it is great and fun.

Appendix K Transcript of 4B

Name: Tape 4B Grade Level: Fourth

Total Years Teaching: Ten Years At Southwood: Nine

What is your understanding of constructivism?

Constructivism is when children construct knowledge based on what they already know, making connections between past experiences and using that prior knowledge to connect to new learning. Therefore, building and constructing a conceptual base of whatever the topic is.

Did you have specific training in constructivism: If so, what?

I know I did not have college course work. I never took a class called constructivism but I feel like I kind of naturally moved into it. Being here at Southwood, kind of constructive my idea of constructivism. I remember when the school started and I remember Leanna talking about the idea of constructivism (unintelligible) though and looked at all of our materials, our books, our resources and came up with the idea of the good concepts that we want students to be able to grasp at our grade level. We constructed those ideas just through talk, summer training and meetings and all that to come up with this idea of what constructivism is. I do not know if people call that formal professional development or just kind of teaching professional development.

Would you describe your classroom as a constructivist classroom? If so, how?

Yes. There are not very many times where I give the information for them to take and do what I tell them to do. We have a lot of discussion. I start a lot of our units and lessons asking them what they already know about things, what experience have you already with it, what does this word mean to you, what does it sound like or this idea. So we pick kind of what they already know and then introduce little chunks to connect to the prior knowledge as we go. For example, venn diagrams are something that we use to compare and contrast. When I started talking about

Appendix K Transcript of 4B

comparing and contrasting, looking at positives and negatives or advantages or disadvantages, I asked them "How do you think we can compare these two things?" and came up with t-charts. They already knew what a venn diagram was. "Okay, what are some are other ways that we can do this, that we can compare these two things?" I would say for the most part it is constructivist but there are still some times that we just kind of have to tell them this is the way we are going do it and then go from there.

What do you see as your role in the classroom?

My role is to kind of be a guide. A guide for learning. Obviously I need to organize things and plan things in a sequence that would make sense but I do not always know exactly where the unit is going to go because I of course have a plan in mind but as I am guiding the kids in knowledge, things kind of go along whatever path they take based on what the kids already know. I have a goal for where I want to get them but that might mean going from Point A to Point Z before getting to Point B, it just kind of depends.

What do you see as the students role in the classroom?

The student's role is to be active, active learners, participate in discussions, be thinkers and be comfortable with the fact that there is not always a right answer and sometimes it is going to take you a while to get the answer and also be comfortable with the fact that some kids might get to an answer differently than others do. I think probably being an active learner is the biggest thing that the kids need to be able to do because if they just sit there and expect me to give information all day long and give answers, then they do not perform very well.

What is the greatest challenge you feel you face in a constructivist classroom?

Lack of time. Organizing time is a huge challenge. I feel like now that I am nine years into it, it is

easier for me to be able to reflect on the days and lessons that I taught and be able to figure out where to go next. Time is a huge challenge. You know as a teacher, you cannot get your job done

between 7:30 and 3:30 or whatever your hours are. So, it means coming in early, it means staying late, it means taking things home. Also, in a constructivist school, time is more than the just the time to grade papers but the time to meet with the kids in smaller groups or more so in one on one situations when you can tell there is a kid in your class who does not quite understand the way things have been going or needs more time to get things done or make the connections. That time is not always available for the one on one meetings. That is another challenge.

I think another challenge sometimes getting parents to understand how the learning happens and how the curriculum works here at Southwood, especially new parents. When you have them coming from a more traditional school with textbooks and more black and white, I have parents that come in my classroom that are used to a more black and white kind of thing, whether it is right or wrong, or this is the way we do it and they are kind of a little bit confused when they first come here. Our way of assessing kids is a little bit different. It just takes time to get them comfortable as to the way things work in a constructivist school.

How is the constructivist philosophy maintained and supported at Southwood?

We have a plethora of resources for the kids and the teachers. That has a lot to do with it. You cannot be a constructivist school with a math textbook and nothing else or a science textbook and nothing else. You need a lot of materials for the kids to use, a lot of hands on materials, manipulatives, opportunities for them to develop their learning in different kinds of ways. You have your different kinds of learners, visualize, auditory, kinestetic, you need to be able to meet all of those needs and therefore you need resources in order to do that. I feel that is maintained

here at Southwood because our administrative team and our curriculum resource teacher and the people who are our leaders at school really value pushing forward with resources and coming up with new ways to do things. I feel that things do not get very stagnant which helps for the constructivism to continue. No one is ever afraid here to ask for something new. I think that for

nine years, the majority of my career, I do not have a lot to compare it to but I think because when you work as a team with the staff and administration it helps the constructivism.

Do your students work in groups? If so, how are groups determined?

Yes. It depends on the experience. Sometimes, I group them in heterogenous groups. Let's say for instance we are studying the native culture here in Florida which is something we try to incorporate and I want them to look at similarities and differences between different native cultures. So, they have to do some research in order to find out. I will put them into different culture groups. I will make those heterogenous groups because we need to have different abilities to be able to read the test, to be able to come up with ideas of what notes are we going to take, in this chart that we have, where are we going to put this information. In that instance, you would need heterogenous abilities. I also group homogenously in reading groups. When I do guided reading, I want them to be pretty much on the same level so that will help our discussion and help us move forward. Sometimes, it is random. If it is game they can all play or if it is a problem-solving experience that they can all work on, it can be random. Sometimes it is personality based. Sometimes you have those problem solving experiences as much as you want to teach them that they have to learn to get along with everyone, sometimes it does not work out so you have to make sure that these kids are separated. Or those kids are separated. I do like them to let them choose groups also because I think they need to have choices.

Appendix K Transcript of 4B

Describe the role of student discourse in your classroom?

I am not sure I am answering this correctly but student talk, depending on the situation, is important. It helps me to gather their understanding. When we have group discussions, we do a lot of things, write down some ideas on their own and then share with a partner or small group, and they come up with "Oh, yeah, that was (unintelligible) so I am going to add that to my list." I tell them to bring to mind (unintelligible) so I think that is important because it helps them to

construct their own ideas and then from there we share with the class. That is how student discourse is important. Also, in small groups and guided reading, they need to talk to me a lot about what they are understanding. A lot of my assessment comes from what they say to me. It is not all paper pencil class work or just responding through paper and pencil. So, that is important. They need to be able to talk to me.

That is it for my questions. Are there questions you hoped I had asked that I did not ask or any comments you want to throw in?

No, I guess I am happy with the questions that you asked. Is there is anything else you were curious about? I would be willing to answer any other questions and take more time.

Appendix K Transcript of 5A

Name: Tape 5A Grade Level: Fifth

Total Years Teaching: Two Years At Southwood: Two

What is your understanding of constructivism?

I think constructivism is students constructing their own knowledge where the teacher plays the role of facilitator and guide. Students are responsible for coming up with their own ways to solve problems in a manner that suits that own individual needs.

Did you have specific training in constructivism: If so, what?

I went to a small private college in North Carolina called Elon and it actually teaches constructivist teaching. So my entire college curriculum was based on constructivism and all of our classes actually teach you how to teach in constructivist ways. When I was doing my methods and internship, I had to use constructivist methods. So, I was doing PLT - instead of calling it methods, we called it PLT, practitism, learning and teaching. I had to fill out PBL (problem-based learning). My training was all constructivist.

Did you know that going to Elon?

I do not think I knew that going to Elon that it would be constructivism-based learning but North Carolina is known for its education programs. It is kind of like (unintelligible) of North Carolina where the education program is really good but it is really small. The school that I student taught at was a lot like Southwood. So, a lot of the same principles and same philosophy. I am lucky that I went out of college with that and came here.

Would you describe your classroom as a constructivist classroom? If so, how?

Yes. My kids guide a lot of what we do. Obviously a lot of our units are already set up. We have them already established but in my classroom at least, my kids always have a say in what goes on.

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The things that we do in the classroom are constructivist. They are always hands on. They are always involved. They are never sitting with a textbook and working out of it. I think our curriculum for math is integrated and very constructivist as is our curriculum for reading as well. My kids are always up and moving. They always have their hands in something and constructing their own knowledge to help them understand it to the best of their ability which is what is great about constructivism is that they all end up with something that will help them in the long run in their own way.

In math, are there textbooks?

No.

Are their textbooks in and around the school?

In fifth grade at least, we have a textbook for science and a textbook for reading. We use them as a supplement. They do not factor into a lot of the lesson. When we do guided reading, we use trade books. We do not use the (unintelligible). In math, the kids do not have a book at all. The math book we use is called Investigations (unintelligible). So there is a teacher book, a teacher manual, that pretty much says this is what we are going to teach your kids to do today and these are the steps to follow and these are tools used, which are basically manipulative of some sort everyday – but the kids do not actually have a book and they are not working problems from rote memory or they are not working problems given an algorithm either.

You described your role in the classroom as a facilitator and guide. How do you see the student role in the classroom?

My students are really teachers. I am obviously the one teaching the big idea but to some extent they are responsible for processing that information and putting it in their mind in a way that they

will remember. In math for example in terms of double digit multiplications, some kids prefer the traditional algorithm and some kids, as a principal I am sure you have seen it, they can try it a

hundred times and it just does not make sense to them or they understand the algorithm but they do not understand what they are doing. So, my goal at least is to get them to understand it. Once they understand it and then they can really come up with their own way to solve the problem. As long as it makes sense and the method is accurate and applicable, then it works.

The big role I want for them is to for them to be questioners. I want them to question things. I want them to ask questions. That is how you learn about the world around you. A lot of times, other kids share the same questions you do. I want them to be explorers. I want to get out there and figure out things and get their hands dirty and make their own knowledge. When somebody gives you some, its like the old prodigy, give a man a fish, feed him for a day, teach him how to fish and he will be fed for a lifetime. This is the kind of the same philosophy. At least in my classroom, I want that to go on forever. As a teacher, I love learning. I want my kids to love learning as much as I do. I think the more fun you make it and the more hands on you make it and the more the kids have to say in what they are doing, the more likely it is that they will love coming to school.

Knowing that students really guide a lot of the discussion, how well do you need to know the material?

Extremely well. For two reasons: One, I need to make sure that I am on par with what we are supposed to doing. Giving them a chance to lead does not mean that we can all pass. Sometimes it does. If it is a teachable moment and you can, but for the majority, you have to know those boundaries you set before you begin so that you know when to reel them back in. So Appendix K

understanding the material is critical for that. Two, because we do not have a textbook. The teacher does not have a textbook there as a guide. A lot of it you have to know what you are doing. You have to know the curriculum very well in order to be able to communicate that to

students without any textural aids. Our units are designed and we have them in binders but most of us (unintelligible) so the teachers really need to understand.

What is the greatest challenge you feel you face in a constructivist classroom?

Testing. I think it is really hard being a constructivist teacher at a constructivist school, it is difficult for our students. They perform very well (unintelligible) for a few years now. It is difficult because our kids are not used to seeing that kind of material. They are used having manipulatives available. They are used to being able to stop and (unintelligible) off of each other. We do not do a lot of FACT. We definitely do some FCAT test just to give them a heads up as to the type of questions you are going to see. This is how you answer an Explain question. This is how you answer a (unintelligible). It is different for them than it is for a traditional school because at a traditional school where they use textbooks, the kids are seeing those type of questions more frequently especially from a (unintelligible) or from your social studies textbook or your science textbook. Since we do not have those our kids do not see that. I think testing is something very difficult for them and for us to teach. They do fine but I think it is always a big challenge coming from a constructivist school and that traditional model is different.

How are assessments used in your class?

For reading, I really have to break it down because we do not necessarily have a set. In guided reading, we use a lot of teacher-based assessment. In our guided reading groups, we will take anecdotal records.. For each kid, we will mark down on the paper what we notice and then we

have that to go back and look at, that observation. We use time for kids in fifth grade. If we are using time for kids, we might use the sheet as an assessment, but rarely. We would more like talk about and then through talking about it having kids lead the discussion. We have debates. I have debates. I know a lot of other fifth grade teachers have debates. We just read this article on (unintelligible) a month ago about the environment and fuel and the lack of gas and oil eventually

down the road. So, this side you need to take we are not wasting gas. You need to take the other side and then have them switch to make sure they understand both sides of the argument and that they can back it up with details. In math, we are using authentic assessment. One fifth grade teacher – I have not started measurements yet in depth – we are doing patterns right now. For example, one of the fifth grade teachers her authentic assessment in measurement was to have the kids come back and actually measure stuff in front of her and then she used a (unintelligible) to assess that. Could they use the scales? Could they read the numbers on the scale? Could they use a ruler or yardstick? It is more authentic and teacher observation than it is traditional pencil and paper.

How do you assimilate new students into the culture and process of your class?

My class is Thompson's Team and I am lucky because I actually moved last year which is a big sign of constructivism so I took my entire fourth grade into the fifth grade. I lost (unintelligible) of mine so we had to assimilate several students into our classroom just for pure numbers. I think it just depends on the teacher. What I do is we start the year where I read the story of Jackie Robinson called Teammates. It is the story of Jackie Robinson and Peewee Reese. We are Thompson's Team and we are teammates. In a team you might not love everybody you are with but you do work together and you treat each other with respect in order to get things done. So that

is how I approach it.

In my classroom, we have class meetings every week. Some people believe that should stop at the third grade or the lower grades but they really benefit from it. They love it. They will ask. "Its Friday. Are we going to have a class meeting today?" "Yes, we are going to have a class meeting today." It is a time for them to talk about what is going on in the classroom. It is a time for them to encourage other students to do the right thing. It is time for them to share positive things about

what is going on in the classroom. I did this last year and for the first six months of this year, I did what we call Nice Notes in my room where during class meeting, every kid gets (unintelligible) somebody else has made I will write something nice about them or something they did for you as a boost because so often kids, and I think it is just the hallmark of being a child, you point out things that are wrong or things that people do that annoy you and you do not ever point out positive things or say, Hey, I really like when you did x,y,z. So, we did Nice Notes for most of last year and the first six months of this year. The kids really enjoy that. I have a big bulletin board in my room that says Teamwork Counts. I hang the nice notes so everybody can read it. The next Friday we switch them out. At least in my classroom, it is all about community, we are a

team. We are Thompson's Team and no one person is more important than any other. I think just the classroom meeting and working together every day they get that.

Do your students work in groups? If so, how are groups determined?

All the time. Again, it depends on what we are doing. Our reading groups are determined by reading levels of the student. I try to keep them with students that are reading at the same level

Appendix K Transcript of 5A

that they are. So when you pick a trade book no one is really struggling and no one finds it extremely easy. Math groups, I do one of two ways. I know there is a name for this grouping and I cannot think of it. I will take a number – I have list of my highest math students all the way down – I kind of scaffold highest to middle and kind of go like that so everybody is getting scaffold but everybody is offering support and everybody is giving support and the people who are needing it are getting support. Our integrated, which is our science and social studies, is integrated with reading and writing so again you try to keep kids at the same ability level with each other but you still want to provide some scaffolding. Also, at times, I have the popsicle stick. If it is something that everybody can do we will popsicle stick it. I have buddy sticks too. One

side of the popsicle stick is numbered 1 through 21 and the other side is a sticker that matches another sticker. So, either I will draw two numbers and read the numbers out or they will each take a stick and find the matching sticker. It just depends on what we are doing.

How much, and when is direct instruction used in your classroom?

Limited. I do not even think I can put a number on it. When I introduce a topic, there will be some direct instruction. Like we started westward movement last week and obviously before I let the kids get into it, I want to take some time at least to introduce it. TAPE STOPS.....

Appendix L Transcript of 5B

Name: Tape 5B Grade Level: Fifth

Total Years Teaching: 20 Years At Southwood: Eight

What is your understanding of constructivism?

The way I see it is that as a teacher I try to get the child to relate to their world the best I can. For example, in my classroom, they just need to make connections otherwise I do not think they really understand it from just reading it in the textbook. We were doing immigration for example. My kids, they actually walked into the classroom on the first day of school as immigrants. A lot of them came in their clothing from their countries. They came with their parents. I said, "Oh, you have had a really hard time on the ship." I had pancakes and juice and they each took turns standing up and saying this is who I am and this is the country I am originally from and they shared that. When they take on that persona you add that unit of study. In fact, I just (unintelligible) that person as we travel through time. We have gone through stock market. Another example is the stock market. We actually pull in stocks. We research stocks everyday. We do (unintelligible) depending on the stock ups and downs. We talked about the research of that. My way of thinking is that it is not just reading it in the textbook and say this occur in history, this is occurring today but how do you relate to it, what connections do you have with this thing or this concept. I always refer back to "your tiny files" in your brain you have background knowledge, just pull it forward and make the connection.

Did you have specific training in constructivism: If so, what?

Leanna brought in a lot of information and exposed us to a lot of literacy about constructivism.

Would you describe your classroom as a constructivist classroom? If so, how?

I guess, I would. Leanna talked about being a constructivist, I always wondered and didn't know.

Appendix L Transcript of 5B

It is funny when people come in and "My gosh, you are a true constructivist." I just see it as a very student-involved classroom and they have a lot of choices. It is just such a natural environment. I don't have to work very hard at it, I guess. It is very relaxing.

You have taught for 20 years, the last eight here, has your teaching style changed since you came here? Were you familiar with constructivism or what you are doing in class now prior to coming here?

When I began teaching, I was more language experience or whole language and I think that has kind of evolved into my constructivism. It is interesting because when I started teaching felt like I had so much control. I used to be a Nervous Nellie. I needed to make sure everyone was on task. I needed to make sure everyone in their seats. I was really nervous until I started reading books by the Goodmans, Lucy _____ and all of the great gurus and I thought, "You know what, I am going to do what _____ Goodman says and (unintelligible). I am going to sit back and observe." I actually consciously took a step back and just watched and took notes. What the kids can do and figure out on their own without me saying. In fact, they can extend their thinking much farther if I let them alone and not just always be the control freak. I did direct instruction. Let them do their thinking. Let them talk to each other and you see the light bulb go off so much more quicker. It is really interesting. I think that part of me has evolved to let them have some say about their learning. Give them choices, make those connections through our curriculum.

What do you see as your role in the classroom?

As a facilitator. I am there to guide. If they are being misled, maybe I will be say "What do think really about this," and try to guide them another way.

What do you see as the students role in the classroom?

Appendix L Transcript of 5B

It is their instruction and I hope they feel they feel like they have a lot of say in what they need. A lot of observation, like when I do assessments. My assessments really guide that instruction and

lead them that way. That is where some of the misconstrued things come through and we talk about it. If I am doing an assessment on math and I notice that that same number, that same question is not being answered correctly, "Oh boy, I need to go back a little bit." That is when the direct instruction would come in a little bit more so.

Another example....I was at home during spring break and I have a little girl who e-mails me. She has been e-mailing me this story that she is writing about World War II. She got really effected by this. She says, " Ms. _____ I have a great idea. Instead of doing quarterly book projects, (students do quarterly book projects) I would like us to do a thing called 'The Island.' We each create an island." I started thinking about this and so when I got back to school, I asked her "What do you mean this idea? It sounds really intriguing to me. What do you mean by that?" She said "It would be really neat. We each create an island and we could put people on it and animals on it." I thought this was a great way to wrap up the year. We have done geography. We talked about our cultures. We talked about endangered species, plant life, animal life, weather conditions. We have done everything. This is a great way to wrap up the year. So, we have a project that we are working on right now. It is called My Island, A Fictional Place. It has to be real in the sense that the island is on plant Earth and you have to give me a longitude and latitude and its location. It has to be logical. If you are on the equator, what is the weather like? If you are in the Pacific Islands, what logically do you think those people would be like. We started researching, on the internet, (unintelligible). Some kids have their island in the Antarctica. Some have an island but they are fictional islands. One boy is working on the Elves versus the Dwarfs.

They are against each other. It sounds like Lord of the Rings but they are on the planet Earth. So, everything makes sense geographically. So everything we have done, the people, endangered species, plant like, everything we have done the entire year is going to backed up into this one unit. "Thank You Vivian." I do not think I could have come up with such an awesome idea. It is

such a collaboration between student and teacher. If I took all of that control, this project would not be as cool as it is turning out to be. The neat thing about it too is that I did like a draft. I did a little Rubric and I have a guide for them to follow so they could check it off as they go along and make sure they have all of the components and the things I feel that need to be there. Then, I have kids coming up and saying, "What about money?" "What about currency?" "Should we say what that should look like?" I tell them that could be extra credit. Now, the challenge. How many more extra credit things can I get for you. Amazing. Now, could I have done this alone? No, absolutely not. They guided their instruction and that is just Vivian. Everybody has sunk into this. It is just amazing.

What is the greatest challenge you feel you face in a constructivist classroom?

It is not the principal. I have had great support here. It is not the true constructivists at the school. They are very supportive also. They only have wonderful things to say. We are all very supportive of one another. Not even my parents. At first, they may question and it is a pattern - the first quarter of questions, questions. Then they see it. They see the growth and they see their children and how they ask questions and how they comment and how they say things. They say, "Oh my gosh, that's you speaking not my child." It is good because they see that their child is thinking. I would say probably say the biggest struggle could be other teachers who are not true constructivists and don't understand why you put in some many hours of work. "Why do you do

this? I'm leaving. It's 3:30. I'm outta here." Well, I can't leave. I have things to do. I need to prepare for the next day. I need to make sure that we are ready to go. There are those people that are truly not constructivists and they really want that math book to follow or that (unintelligible) that says teacher says, student says, teacher says. I cannot even relate to that stuff. I remember my first year of teaching my principal said to me, "Okay, Connie, since you are a brand new teacher teaching first grade, I am going to have you follow the _____so you understand the

skills and the concepts." I laughed at him. I said, "I can't do this. I cannot do this." The teacher said let me read it. I think that it probably the biggest struggle of the teachers that may not be where you are and don't understand. You try to encourage them to do what you are doing. "Let's do the (unintelligible). Let's do the (unintelligible)." We are already working so hard but it is a different type of hard work. It's a fun type of hard work.

Are you self contained or do you share .....?

I feel like I am because this is an enclosed room. These four are actually opposite of each other and there is a pod between them but because my room is kind of out here with the bathrooms, I do feel like I am isolated.

Do you have the same kids all day long?

Yes, I do.

I didn't know that you taught a couple of subjects and then went to another team for a couple...

No.

You talked a little bit about where direct instruction would be used. You said it comes out of the assessment piece.

Yes, You have to be really observant for the assessments. It is one thing to do John's reading

assessment and just say, okay, so many miscues. Unless you really go back and look at what those miscues mean they are useless. The same with the writing. I go through writing assessments in the beginning of the year and I try to look for commonalities between all of my kids. There are a lot of kids missing capital letters. Well, right there, I need to revisit that.

Do your students work in groups? If so, how are groups determined?

Yes. By choice. Sometimes if there is a conflict occurring about who is going to work with you....Eve showed us a Wheel of Wonder. (unintelligible) and grab names and say, okay you guys are working together because obviously you can't pick the person you want to be with but for the

most part they choose and it works out very well that way. Unless you have that one little guy that nobody wants to work with and then you just to kind of gently encourage.

Describe the role of student discourse in your classroom, student to teacher, student to student?

I think that it happens all the time. My classroom is quite loud and quite active, especially this year's class. They have a lot to say. For the most part, I feel they are on task. I have quite a group this year that are kind of going off task which kind of (unintelligible) a little bit. You have to bring them back into the circle. The girls are very verbal. They like to share. We have some trouble with opinions like, well, she said this. It seems like they are almost a year ahead socially, sixth graders, because they kind of get on each other a little bit. It is different than it has been in the past. I don't know why but this year has been a little bit more. A lot of it is socialization. A lot of taking the afternoon and have our team meeting to address something and role play. (unintelligible). I have even had Lori come in. She came in. At the beginning, the girls were having lots of conflicts, lots of leaders. They are very strong. They all want their way. Some of them do not want to do it. They created a band. We meet during lunch on Thursdays and they do the choreography and they do (unintelligible) band. I just watch and eat my lunch. That's where a lot of the conflict came in but they finally came to the point where "(unintelligible)." "If that's what you want to do, let's do it." They come around to what they need to do. So they solve their own problems but sometimes the process getting there is ..... You can't sit there are argue and be a part of it. You have to sit there. I heard you say, I heard you say so maybe this is the compromise. Just deal with socialization.

Is there anything you wished I had asked or anything you want to say?

I can't think of anything right now. I need to process that. We are working on our islands this morning. We are taking their rough draft for each area and they are revising it and editing it so I am going to give them (unintelligible) if you want to see that observation. We are going to present islands the first week of May if you want to come back to see that. It should be fun.

CTI - Community of Learners

	0	1	2	3	4	5	6
1.	The teacher initiates nearly all questions and students answer nearly all questions			Both teacher and students initiate and answer questions but the teacher controls both			Both teachers and students initiate and answer questions
2.	Climate of the classroom is primarily non-challenging (does not push understanding)			Climate of the classroom is somewhat challenging			Climate of the classroom is primarily challenging (consistently pushing understanding)
3.	In the classroom, students learn predominantly by listening to the teacher			In the classroom, students learn predominantly by listening to the teacher but occasionally from other students			In the classroom, students learn predominantly through interaction with others, including teacher
4.	Opportunities for students to think aloud and receive critique from peers almost never occur			Opportunities for students to think aloud and receive critique from peers are more the exception than the rule			Opportunities for students to think aloud and receive feedback from peers are more the rule than the exception.
5.	Interaction to support the challenging and clarifying of ideas seldom occurs			Interaction to support the challenging of ideas occasionally occurs			Interaction to support the challenging and clarifying of ideas happens frequently

CTI - Community of Learners (p 2)

	0	1	2	3	4	5	6
6.	Discourse in which students explain and elaborate their assumptions, points of view and reasoning seldom occurs			Discourse in which students explain and elaborate their assumptions, points of view and reasoning, occurs occasionally		Discourse frequently provides opportunities for students to explain and elaborate their assumptions, points of view, and reasoning	
7.0	The lesson is almost never characterized by connected discourse (whole and small group)			The lesson occasionally uses connected discourse, usually in a large group format only		The lesson is characterized by connected discourse (whole and small group)	
8.	Classroom discourse is teacher controlled and participation is teacher-dominated			Classroom discourse is controlled by the teacher but both students and teacher participate		The control of classroom discourse is shared between teacher and students. Participation is widespread.	
9.	Opportunities for students to work collaboratively rarely occur.			Opportunities for students to work collaboratively are occasional		Opportunities for students to work collaboratively are frequent	
10.	Students almost never work together			Students occasionally work together		Students frequently work together	

CTI – Community of Learners (p 3)

11. 0 1 2 3 4 5 6

Students are not intellectually active	Students are occasionally intellectually active	Students are intellectually active

CTI - Teaching Strategies

	0	1	2	3	4	5	6
1.	Teacher relies mainly on literal level recall and known-answer questions, and rarely or never uses thematic, discussion-generating questions			Teacher occasionally uses literal level recall, and known-answer questions as well as thematic, discussion-generating questions			Teacher rarely uses literal level recall, and known-answer questions as well as thematic, discussion-generating questions
2.	Teacher does not intentionally provide students with opportunities for cognitive disequilibrium appropriate for their cognitive understanding			Teacher provides students with opportunities for cognitive disequilibrium appropriate for their cognitive understanding			Teacher intentionally provides students with opportunities for cognitive disequilibrium appropriate for their cognitive understanding
3.	Teacher does not intentionally provide students with opportunities to reflect of their own and others ideas			Teacher occasionally provides students with opportunities to reflect of their own and others ideas			Teacher intentionally provides students with opportunities to reflect of their own and others ideas
4.	Teacher seldom provides students opportunities for scaffolding from teacher or other students			Teacher occasionally provides students opportunities for scaffolding from teacher or other students			Teacher frequently provides students opportunities for scaffolding from teacher or other students

CTI – Teaching Strategies (p 2)

5.

0	1	2	3	4	5	6
Teacher's role is to provide knowledge, skills and answers. Efforts to facilitate students' critical inquiry are absent			Teacher's primary role is to provide knowledge, skills and answers. A less critical role is to facilitate student critical inquiry.			Teacher's primary role is to facilitate critical student inquiry, not to provide knowledge, skills and answers.

6.

0	1	2	3	4	5	6
Teacher has little or no awareness of student understanding			Teacher occasionally has a general awareness of student understanding			Teacher routinely has consistent awareness of student understanding

7.

0	1	2	3	4	5	6
Teacher does not accommodate student needs and interests by modifying the lessons when the opportunity occurs.			Teacher occasionally accommodates student needs and interests by modifying the lessons when the opportunity occurs.			Teacher accommodates student needs and interests by modifying the lessons when the opportunity occurs.

8.

0	1	2	3	4	5	6
Teacher makes few, if any, attempts to activate and/or make use of students' background knowledge			Teacher occasionally attempts to activate and/or make use of students' background knowledge			Teacher consistently and systematically attempts to activate and/or make use of students' background knowledge

9.

0	1	2	3	4	5	6
Teacher questioning is seldom to make students think through an issue for themselves.			Teacher questioning is occasionally to make students think through an issue for themselves.			Teacher questioning is mostly to make students think through an issue for themselves.

10.

0	1	2	3	4	5	6
Use of questions and classroom discourse is not specifically to reveal students' developing knowledge structures			Use of questions and classroom discourse may occasionally reveal students' developing knowledge structures			Use of questions and classroom discourse is intended reveal students' developing knowledge structures

11.

0	1	2	3	4	5	6
Opportunities for students to not know, to question, and/or to seek information almost never occurs.			Opportunities for students to not know, to question, and/or to seek information almost never occurs.			Opportunities for students to not know, to question, and/or to seek information almost never occurs.

CTI - Learning Activities

	0	1	2	3	4	5	6
1.	Instructional strategies that intentionally create opportunities for students to explore their own disequilibrium are rare			Instructional strategies that intentionally create opportunities for students to explore their own disequilibrium are occasional			Instructional strategies that intentionally create opportunities for students to explore their own disequilibrium are frequent
2.	Opportunities for both confirming and disconfirming are rarely provided			Opportunities for both confirming and disconfirming are occasionally provided			Opportunities for both confirming and disconfirming are frequently provided
3.	Most activities can be completed through routine applications of previously learned knowledge. Activities seldom require the use of knowledge and skills in a new way.			Most activities can be completed through routine applications of previously learned knowledge. However, some activities require the use of knowledge and skills in a new way		5	Most activities cannot be solved through routine applications of previously learned knowledge. Most activities require the use of knowledge and skills in a new way
4.	Activities are constructed around isolated content. Disconnected detail is stressed rather than big ideas.			Activities are constructed around isolated content. While detail is stressed, big ideas are occasionally developed. .			Activities are constructed around big ideas. Detail are used to support big ideas.

CTI- Learning Activities (p 2)

5.

0	1	2	3	4	5	6
Activities are seldom adaptable to accommodate individual students' interests, needs and abilities.			Activities are moderately adaptable to accommodate individual students' interests, needs and abilities.			Activities are readily adaptable to accommodate individual students' interests, needs and abilities.

6.

0	1	2	3	4	5	6
Activities do not require students to relate ideas, concepts and knowledge			Activities occasionally requires students to relate ideas, concepts and knowledge		Activities nearly always require students to relate ideas, concepts and knowledge	

7.

0	1	2	3	4	5	6
Activities do not require students to explain and elaborate the results of their learning to other students			Activities occasionally require students to explain and elaborate the results of their learning to other students		Activities almost always require students to explain and elaborate the results of their learning to other students	

8

0	1	2	3	4	5	6
Raw data, primary sources, found objects, manipulatives, and/or resource people are almost never used as materials for learning.			Raw data, primary sources, found objects, manipulatives, and/or resource people are occasionally used as materials for learning.		Raw data, primary sources, found objects, manipulatives, and/or resource people are frequently used as materials for learning.	

CTI – Learning Activities (p 3)

9.

0	1	2	3	4	5	6
Activities seldom require students to be self-directed			Activities occasionally require students to be self-directed			Activities require students to be self-directed

10.

0	1	2	3	4	5	6
When student encounter contradictions and errors, they do not seek resolution			When student encounter contradictions and errors, they sometimes seek resolution			When student encounter contradictions and errors, they seek resolution

11.

0	1	2	3	4	5	6
Learning activities seldom provide opportunities for students to reflect on their own and others' ideas.			Learning activities occasionally provide opportunities for students to reflect on their own and			Learning activities usually provide opportunities for students to reflect on their own and others' ideas.

CTI - Curriculum-Assessment

	0	1	2	3	4	5	6
1.	Selection of content for teaching is almost never based on students' interests, prior knowledge and/or particular learning needs.			Selection of content for teaching is only occasionally based on students' interests, prior knowledge and/or particular learning needs.			Selection of content for teaching is frequently based on students' interests, prior knowledge and/or particular learning needs.
2.	Teacher seldom organizes knowledge and skills to be learned in such a way that relationships among them are obvious.			Teacher occasionally organizes knowledge and skills to be learned in such a way that relationships among them are			Teacher frequently organizes knowledge and skills to be learned in such a way that relationships among them are obvious)
3.	Information and skills are taught to students in an externally determined sequence that is nearly always followed			Information and skills are taught to students in an eternally determined sequence. Occasionally this sequence is altered based on an immediate need for the information or skills			Information and skills are taught to students because they are needed to complete a relevant task
4.	Content is taught without process and/or process is taught without content			Content and process are occasionally integrated.			Content and process skills are most generally integrated.

CTI- Curriculum-Assessment (p 2)

	0	1	2	3	4	5	6
5.	Students seldom, if ever, assess themselves.			Students occasionally assess themselves.			Students frequently assess themselves.
6.	Teacher depends solely on the district textbook to present the lesson. Teacher makes no modifications with students.			Teacher depends somewhat on the district textbook to present the lesson. Teacher and students make modifications.			Teacher does not depend on the district textbook to present the lesson. Teacher and student adapt or develop content and materials for their needs..
7.	All students are expected to perform at the same standard using the same demonstration of performance at the same time.			All students are expected to perform at the same standard using the same demonstration of performance but the timing may vary			All students are expected to perform at the same standard but the demonstration of performance and the timing may vary by student.
8.	Correctness of performance is the most important aspect of student assessment. Diagnosis of reasons for errors is not part of assessment.			While diagnosis of reasons for error sis used, emphasis is primarily on correctness of performance.			Diagnosis of reasons for errors is the most important aspect of student assessment.

0	1	2	3	4	5	6

9.

Results of assessments are almost never used to guide instructional decision making.			Results of assessments are only occasionally used to guide instructional decision making.			Results of assessments are usually used to guide instructional decision making.
0	1	2	3	4	5	6

10.

Errors and misperceptions are viewed as to be avoided. Teacher and students do not seek to understand them but rather seek the correct answer instead.			Errors and misperceptions are viewed as unavoidable but are minimized. Teacher and students only rarely seek to understand them and/or appreciate their informative value.			Errors and misperceptions are viewed as normal, not minimized or avoided.. Teacher and students seek to understand them as they become evident and to learn from them

11.

0	1	2	3	4	5	6

Students seldom, if ever, provide relevant feedback to other students.			Students occasionally provide relevant feedback to other students.			Students frequently provide relevant feedback to other students.

About the Author

Mr. Joseph Brown is currently serving as principal of a middle school in Tampa, FL. He earned his B.A. in Philosophy from a small college in Miami, FL, and has two Masters of Arts degrees from the University of South Florida. He has had numerous published works, including: three articles, a book review and a chapter in a book on educational leadership. He is married with two daughters.