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EXPERT RURAL ELEMENTARY SCHOOL TEACHERS' PLANNING FOR EFFECTIVE INSTRUCTION

by

Lance T. Hatch

A dissertation submitted in partial fulfillment of
the requirements for the degree

of

DOCTOR OF EDUCATION

in

Education

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UTAH STATE UNIVERSITY
Logan, Utah

2015

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ABSTRACT

Expert Rural Elementary Teachers' Planning for Effective Instruction

by

Lance T. Hatch, Doctor of Education

Utah State University, 2015

Major Professor: Sarah K. Clark, Ph.D.
Department: Teacher Education and Leadership

Effective instructional planning is not the only skill a teacher must possess in order to be considered an expert. However, it is very difficult to imagine a teacher experiencing high levels of learning for students if planning practices are ineffective or nonexistent. Learning how to plan for effective instruction is a critical part of the work performed daily by the elementary school teacher. While some new and/or struggling teachers in urban school districts have access to professional development on a variety of topics including instructional planning, teachers in rural school districts often struggle to find professional development opportunities. This study sought to gather information and insight from rural teachers who demonstrate expertise in realizing high levels of student learning. The specific planning decisions they made and activities they engaged in while planning were studied. Not only were the planning practices identified, but the reasons said practices were employed were investigated. Five expert elementary school teachers employed in a remote Utah school district served as the cases for this qualitative research.

Observations, lesson plan documentation, and interview data were collected and analyzed. It was found that the expert rural elementary school teachers spent the majority of their planning time thinking about curriculum goals, learning objectives, and selecting appropriate resources. Very little thought was invested in how teachers would interact with students, how students would interact with each other, or how students would interact with their environment. This was because of a repertoire of teaching skills that could be used on an improvisational basis depending on how students responded. Instructional leaders, based on the findings of this study, may gain insight into the thought processes behind expert teacher instructional planning and thus possess new tools for working with novice teachers to improve their instructional practices.

(187 pages)

PUBLIC ABSTRACT

Expert Rural Elementary Teachers' Planning for Effective Instruction

by

Lance T. Hatch, Doctor of Education

Utah State University, 2015

Learning how to plan for effective instruction is a critical part of the work performed daily by the elementary school teacher. While some new and struggling teachers in urban school districts have access to professional development on a variety of topics including instructional planning, teachers in rural school districts often struggle to find training opportunities. This study sought to gather information and insight from rural teachers who demonstrate expert instructional planning. The specific planning decisions they made and activities they engaged in while planning were studied. Not only were the planning practices identified, but the reasons said practices were employed were investigated. Five expert elementary school teachers employed in a remote Utah school district served as the cases for this qualitative research. Observations, lesson plan documentation, and interview data were collected and analyzed. It was found that the expert rural elementary school teachers spent the majority of their planning time thinking about curriculum goals, learning objectives, and selecting appropriate resources. Very little thought was invested in how teachers would interact with students, how students would interact with each other, or how students would interact with their environment.

This was because of a repertoire of teaching skills that could be used on an improvisational basis depending on how students responded. From this study, instructional leaders may gain insight into the thought processes behind successful planning and thus have new tools for working with novice teachers to improve their lesson planning.

ACKNOWLEDGMENTS

I would like to thank Dr. Sarah Clark for her tireless efforts and timely feedback. She embodies the essence of what it means to be a mentor. Much of what was good about this study is a result of my collaboration with Dr. Clark. I thank Dr. Sylvia Read who believed in this project, suggested the use of the think-aloud process, and helped me to connect with Dr. Clark as my committee chair. I would also like to thank the members of my committee, Drs. Michael Freeman, Susan Turner, and Brian Warnick, for their instruction, support, encouragement, and constructive feedback.

I thank my parents, Alan and Dianne Hatch, for instilling in me a strong work ethic without which this project could not have been completed.

I give special thanks to my wife, Sherstin, and my children, Yaerli, Trinalee, Keenan, and Kitahni, who have provided support and love as they patiently endured my absence while I worked on this dissertation.

Lance T. Hatch

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CHAPTER I

INTRODUCTION

In the fall of 2012, I began my tenure as the principal of a large elementary school with 780 students and over 30 teachers. The year before I arrived had been a tough one for the school. The staff had gone through two principals and several teachers resigned from their positions midyear. As a result, it was necessary to hire 11 new teachers. Being located in a remote rural area, 154 miles from the nearest urban area, it was very difficult to attract teachers. Because of the lack of applicants, two teaching positions went unfilled until the Friday before school started. Of the newly hired teachers, only two of them had more than one year of experience and most had no teaching experience at all. A few had never taken any education classes and were pursuing an alternate route to licensure.

I quickly realized that one of the biggest challenges for these new teachers was instructional planning. The novice teachers were lost when it came to planning effective instruction for their students. When teachers plan for instruction, they determine a course of action for the delivery of instruction. Lesson plans have been shown to have such a strong influence on teachers that they tend not to deviate from their plans once instruction has begun (Shavelson, 1983). Shavelson found that by knowing the contents of a teacher's lesson plan, much of the teacher's behavior can be predicted.

As the instructional leader of the school, I determined that I needed to teach these new teachers how to plan their instruction. I consulted instructional coaches and the resources available from Archer and Hughes (2011), DuFour, DuFour, Eaker, and Many (2006), and Hunter (1982), and I soon realized that all I was really doing was handing out

templates for lesson plans and suggesting that by filling out the template prompts, instruction of the new teachers would improve.

New teachers deserve better professional development in instructional planning than the simple encouragement to use templates and forms (Reiser, 1994). If teachers are to make the transition from organizing classroom activities to designing meaningful and effective lessons, they must gain the knowledge and expertise expert teachers demonstrate in their ability to design and deliver effective and meaningful instruction (Ornstein, 1997).

Successful lesson planning has been described as the construction of educational experiences that are organized in such a way as to obtain the desired educational outcome (Tyler, 1949). When teachers struggle with lesson planning, remediation of the teacher is preferred over termination (Beesley, Atwill, Blair, & Barley, 2010). This is especially true in rural schools where vacancies can be difficult to fill. However, teaching is approached differently by expert teachers than by novice teachers (Bellon, Bellon, & Blank, 1992). Instructional leaders cannot lead beginning or struggling teachers to become experts at planning instruction without understanding how it is that expert teachers plan and organize their instruction. The study of expert teachers provides models for novices to follow and gives information about the routines, schema, and scripts employed effectively by the experts (Berliner, 1986). Expert teacher knowledge in the area of lesson planning was the focus of this study.

Purpose of the Study

In this study, I examined the thinking of expert rural elementary school teachers as they planned their instruction. More specifically, the study's purpose was to reveal the planning decisions expert rural teachers make *while* they were planning instruction. Additionally, my study investigated the thinking behind these planning decisions. This investigation provides insight into how and why expert rural teachers plan instruction the way they do.

Research Questions

The research questions for this study included the following:

1. What processes and decisions do expert rural elementary school teachers make when planning daily instruction?
2. What resources do expert rural elementary teachers consult as they plan for their daily instruction and why do they choose to consult these resources?
3. What documentation do expert rural teachers make of their daily instructional planning decisions and why do they create these records?
4. What instructional planning decisions are made but not recorded in any physical way by expert rural teachers and why does the teacher choose not to record these decisions?

The assumption or theoretical proposition (Yin, 2009) implicit in these questions was that expert teachers developed their own planning strategies in preparation for their instructional day. Over time, they tried different planning strategies and stuck with those

that helped them best achieve their goals and discarded those that did not. An additional theoretical proposition was that such expert teachers had a reason or purpose for documenting their instructional planning decisions. Likewise, it was assumed that there was a reason, either explicit or implicit, for refraining from recording certain planning decisions.

Definitions of Terms

Rural schools: According to the National Center for Education Statistics (2013), rural schools are defined using three different categories. These are fringe rural areas, distant rural areas, and remote rural areas. Fringe areas are less than or equal to five miles from an urbanized area. Distant areas are those located more than five miles but less than or equal to 25 miles from an urbanized area. Remote areas are those that are more than 25 miles from an urbanized area. The school district serving as the setting for this study is therefore classified as remote. The nearest urbanized area is 154 miles away.

Planning strategies: Planning strategies are regular courses of action or procedure (Freiberg & Driscoll, 2000) used by teachers to design and implement instruction. Planning strategies can be habitual or mechanical performances of a previously established procedure. In the case of expert rural teacher planning, these are the regular courses or habitual performances they have developed over time and have found lead to successful instructional planning. Planning strategies consist of the documents produced, the materials referenced, the way the teacher interacts with program materials, or any other activity performed by the teacher in order to plan for instruction. Planning activities

can be thought of as the teacher actions that can be seen or observed during planning sessions. For example, a teacher may begin planning sessions with the examination of a scope and sequence document.

Thought processes. Thought processes, as Taylor (1970) suggested, are the "real world" of curriculum planning; they are "what goes on in the mind as the teacher engages in the act of planning" (p. 3). Simply learning about the strategies individual teachers employ during planning is of lesser importance when compared to the usefulness of learning why the expert teachers choose the planning strategies they employ. Clark and Peterson (1986) stated,

> While we may learn much that is interesting and useful from a technical point of view from research on teacher planning, interactive thinking, and teachers' attributions, we can make sense of these findings only in relation to the psychological context in which the teacher plans and decides. (p. 285)

It is essential that a cognitive investigation of the lesson planning thought process accompany the description of teacher planning strategies. Either approach without the other would result in a fragmented and incoherent study.

Daily planning. Ornstein (1997) suggested that there are five levels of instructional planning: yearly, term, unit, weekly, and daily. For the purposes of the current study, the focus was on daily instructional planning. This is not to say that the other levels of planning are less important, but the intent of the study was to examine the perspectives of expert rural teachers as they faced a new day with endless possible variations to schedule and activity.

CHAPTER II

REVIEW OF LITERATURE

In this section, the review of literature is outlined and presented. First, I began with the theoretical framework that provided a foundation for and informed the study. Second, because the setting of this study was rural, I reviewed the literature examining this unique educational context. Third, the need for instructional planning was presented in order to describe the value and purpose of this teaching tool. Next, I outlined the instructional planning, philosophies, models, practices, and processes discussed in the research literature. In this section of the review, I explained a *Mixed Model of Instructional Planning* that I developed by incorporating the common components of instructional planning models identified in the research literature into one model. Fifth, I examined the research studies conducted on the topic of instructional planning presenting both the findings and limitations of this research. Sixth, this study examined the instructional planning of expert teachers so the literature comparing the planning of expert and novice teachers was examined and presented. Finally, I provided a summary of the findings and insights gained from this review of the literature.

Theoretical Framework

Two theoretical frameworks provided the foundation for this study. These were the Chaos Theory (Larsen-Freeman, 1997) and Social Development Theory (Vygotsky, 1978). Classrooms can be described as complex and unpredictable or chaotic. The chaos theory (Larsen-Freeman, 1997) describes some environments as being particularly

sensitive to initial conditions. The butterfly effect is a well-known phenomenon exemplifying the essence of the chaos theory. A butterfly fluttering its wings in Africa may cause a chain reaction resulting eventually in a change in the local weather pattern. The butterfly effect is an example of the chaos theory because it proposes that even a very small change in an initial condition can result in a large-scale change in the behavior of the complex system. Cvetek (2008) argued that chaos theory is an acceptable lens through which to view classroom life and suggests that small changes in behavior such as a certain remark from a student or the way a teacher introduces an activity can have major impacts on the course of the lesson. Therefore, planning becomes critical. Traditional lesson plans provide a clear and logical sequence of activities that the teacher will follow. Unfortunately, classrooms are neither clear nor logical at times. As a result, these plans can end up being of little use. Instead, Cvetek proposed that teachers should see themselves as *agents of chaos* and accept the complexity and unpredictability in the classroom. These teachers must respond to problematic situations in novel and unpredictable ways. Teachers can plan for unpredictability by being less concerned with writing detailed objectives and more concerned with imagining or creating mental images of desired responses to different situations that might emerge.

In line with this theory, Sawyer (2004) suggested that teaching is metaphorically seen as being one of two kinds of performances; teachers as actors in a play who are given their lines and deliver them, and teachers as actors in improvisational theater who interact and respond to people and situations which are unpredictable and require creativity and spontaneity. Although rooted in some type of structure, Sawyer advocated

that planning must recognize and allow for *disciplined improvisation*. Similarly, Boyd (2012) suggested that teaching requires flexible lesson planning in which there is no script and teachers must continually make decisions and revisions to their plans.

Vygotsky's (1978) social development theory also provided important insight regarding a critical component of this study—the expert teacher. Within this constructivist learning approach, Vygotsky identified the need for a *More Knowledgeable Other* (MKO) in order to influence and provide scaffolding for the learner. In order to be considered the MKO, one must exhibit a better understanding of the skill or demonstrate a higher ability level than the learner. In this case, the MKO is typically known as a school leader, the principal, or an instructional coach, but Vytgotsky emphasized that the MKO may also be a peer. In this study, the assumption is that learning from the expert teacher, or the MKO, can provide much needed insight and information for the novice or struggling teacher attempting to learn the processes and nuances inherent in designing effective instruction. This study identified the MKO and investigated how they planned to manage chaos. Insights gained from this study may influence other educators to plan more effectively.

These two theories provide the theoretical framework helpful in understanding the setting and context of this study—the rural elementary school classroom, and the individuals or MKO examined in this study—the expert rural elementary school teacher. These two components make up an integral part of the study.

The Rural School Setting

Rural schools face unique challenges when it comes to recruitment and retention of teachers as well as professional development. These challenges are often the result of a limited tax base from which to receive revenue, the need to provide services to a large geographic area, inadequate facilities, limited support services, high transportation costs, and limited access to sources of professional development opportunities (Helge, 1992; Howley, 1991; Knapczyk, Rodes, & Brush, 1994; Mitchem, Wells, & Wells, 2003). Remote school districts find that school reform activities, along with quality professional development, are stifled by declining enrollment resulting in loss of funds, school closings, taxpayer revolts, and reductions in staff (Howell, 1989; Meyers, 1989; Schmuck & Schmuck, 1992; Stern, 1994). Moreover, most rural areas rely on local economies that are specialized. These economies are subject to the ups and downs of each individual market. To compound the problem, nonmetropolitan federal spending has dropped sharply since 1980 (DeYoung, 1991).

Additionally, a related but separate issue facing rural schools is the recruitment and retention of teachers (Matthes & Carlson, 1987). Universities and colleges rarely provide courses designed specifically for the preparation of rural teachers (Barker & Beckner, 1987). Once rural schools have secured teachers, it is another problem to retain them. Teachers in rural areas express that the greatest disadvantage of working in a rural school is the personal and professional isolation they experience (Carlson, 1990; Massey, & Crosby, 1986; Nachtigal, 1989). Seltzer and Himley (1995) listed geographic isolation of both teachers and schools, limited availability of substitute teachers, and unavailability

of professional development resources as roadblocks to providing effective staff development. In the face of these significant challenges, rural schools are faced with few options when it comes to the support of new teachers or the remediation of struggling teachers.

In an analysis of teacher retention and recruitment, Boe, Bobbitt, Cook, Witener, and Weber (1997) found that the size of the school district is the major determinant for teachers who migrated from one school district to another. More specifically, the smaller the district, the more likely it is that the teacher leaving is moving to a larger school district. According to Beesley and colleagues (2010), who performed an analysis of the Schools and Staffing Survey (SASS), rural schools report a higher percentage of vacancies that are labeled as *very difficult* or *not able* to fill when compared to other schools. Furthermore, Provasnik and colleagues (2007) found that a smaller percentage of rural teachers reported satisfaction with their salaries when compared with teachers from urban or suburban schools. In fact, rural teachers earn less on average than teachers in towns, suburbs, or cities by almost $3,000 per year. These factors, along with the isolation that often exists in remote areas, can make it difficult for rural schools to fill their teacher vacancies and retain teachers.

Because rural school districts struggle to recruit and retain teachers, a decision to non-renew or terminate employment for a teacher is not taken lightly (DeYoung, 1991). Berry (1984) found that metropolitan locations and areas close to universities share the characteristic of having a plethora of applicants. These districts adopt an attitude that if a teacher does not work out, they can quickly be replaced by someone better. Rural schools

often experience the opposite attitude. A scarcity of applicants leads to the mentality that principals had better hold on to their employees for fear of not being able to replace them.

When a teacher struggles, rural administrators often wonder if they will be able to replace the struggling teacher, and if they do, they must consider the possibility that the next teacher may not be any better. Instead, the choice is often made to put in as much time, effort, and resources as are possible towards the remediation of the teacher and into providing professional development for all new teachers (DeYoung, 1991). However, as stated by Erickson, Noonan, and McCall (2012), rural schools often lack the resources and options for professional development to which their urban peers have access. Additionally, the remote nature of rural districts makes any partnership with a university unlikely. The possibility of sending teachers to a city three to four hours away to receive professional development on lesson planning is cost prohibitive due to fuel, lodging, and other travel expenses.

Newmann, King, and Youngs (2000), however, found that comprehensive professional development in an urban setting was most strongly related to the school's initial level of staff knowledge, skills, dispositions and principal leadership and less related to funding levels and district policy. In other words, higher quality professional development is sought out by principals and staff members who possess sound knowledge, effective skills, and successful dispositions than what would be sought out by principals and staff members possessing less initial capacity. Clearly, to have access to quality professional development and to actually seek it out and implement it are two different things. Research suggests that while urban areas have the privilege of access to

quality professional development, rural schools struggle to access quality training for teachers (DeYoung, 1991; Erickson et al., 2012). The emphasis here is on access, not level of implementation.

One may conclude that rural districts are devoid of expert teachers due to the bleak picture painted above. Although the challenges are real and significant, there are many expert teachers available in rural schools that are motivated to live and work in rural areas for a variety of reasons (Collins, 1999; Davis, 2002; Harris, 2001; Howley & Howley, 2004; Mollenkopf, 2009). Some teachers grew up in the rural community where they now work and have an appreciation for the sense of community that is experienced in the rural lifestyle. Many have family members who live close by. Some teachers enjoy the challenge of the work environment where they must employ creativity and problem solving regularly. Teachers become involved in and connected to the community on levels beyond the school. Expert rural teachers are hard to find and often experience a sense of appreciation from colleagues, supervisors, and the community (Collins, 1999; Davis, 2002; Harris, 2001; Howley & Howley, 2004; Mollenkopf, 2009). For these reasons, expert teachers exist in rural school districts despite their many challenges. One resource that rural schools have access to in the efforts to provide professional development is the expert teacher. If rural districts are to improve instructional planning practices for new and less effective teachers, they must learn from these experienced and expert teachers by examining the planning strategies they employ and why they plan the way they do.

Rural schools face a variety of challenges in providing professional development

for teachers. Although the recruitment and retention of teachers in rural settings is a challenge, expert teachers do exist in these areas. Moreover, these expert teachers are the best and most reliable source of professional development for rural districts. The study of the planning practices of expert rural elementary school teachers will provide valuable information that will influence the practices of teachers aspiring to become experts.

Need for Instructional Planning

Planning for instruction is one of the most important skills teachers need to be successful in the classroom (Reiser & Mory, 1991). Planning is a psychological process involving the envisioning of the future while considering how to achieve it in the here and now (Clark & Dunn, 1991). Instructional planning consists of the development of the steps teachers expect to follow while they are instructing students toward a curricular goal or instructional objective. Shavelson (1987) described instructional planning in general as a formulation of a course of action for a specific period of time. These decisions are made before students arrive and may be written or simply recalled mentally. Taylor (1970) explained that instructional planning is central to the whole educational process and that it provides definition, direction, coordination, and purpose to teaching. Success in the business of student learning is often determined long before the students enter the classroom. Each school day's activities are first conceived in the mind of a teacher before they become a reality. Teachers create images or cognitive representations of how instructional activities should play out. The teachers then work to make their image become a reality (Parker & Gehrke, 1986).

Porter (2006) described four different kinds of curriculum that teachers use in the planning of instruction. The *intended* curriculum is the learning outcome the teacher desires the students to achieve as a result of the lesson. The *enacted* curriculum is that which is actually delivered regardless of what was intended. The *assessed* curriculum may or may not be consistent with the previous two but reflects the communication of what was learned from the student to the assessor. The *learned* curriculum is the actual learning outcome experienced by the students, and again the learned curriculum may or may not align with the intended, enacted, or assessed curriculum. Thoughtful lesson planning allows the teacher to outline the intended curriculum and devise ways to ensure that the enacted, assessed, and learned curriculums are in harmony with each other.

Clark and Yinger (1987) explained that instructional planning is a psychological process as well as a practical activity. Instructional planning functions as a guide through day-to-day activities so that teachers can achieve their instructional goals. Clark and Yinger determined the following: First, teachers do not just act spontaneously; their thinking influences their behavior. Second, the implicit and explicit knowledge that teachers have regarding students, instructional processes, learning environments, and content impact their planning. Third, teachers are more effective when they are able to adapt their curricula to create learning opportunities that are appropriate for a diverse group of students. Fourth, instructional planning is a complex and interactive process involving the construction of shared meaning, negotiation, and communication. Finally, instructional planning requires teachers to integrate large amounts of information into distinctive and unique contexts. Designing effective instruction is a complex and

complicated endeavor.

Freiberg and Driscoll (2000, pp. 25-30) also identified the functions of planning to include giving an overview of instruction, facilitating good management and instruction, making learning purposeful, providing for sequencing and pacing, tying classroom instructional events to community resources, reducing the impact of intrusions, economizing time, making learner success more measureable to assist with re-teaching, providing for a variety of instructional activities, creating the opportunity for higher-level questioning, assisting in ordering supplies, guiding substitute teachers, providing documentation of instruction, and establishing a repertoire of instructional strategies. Moreover, Bellon and colleagues (1992), determined that instructional planning performs several important functions including providing the best possible learning opportunities, providing students with special needs the accommodations they need, providing direction and guidance for substitute teachers, providing adequate coverage of the learning expectations, and allocating time appropriately.

Freiberg and Driscoll (2000) described teacher planning as “the thread that weaves the curriculum, or the *what* of teaching, with the instruction, or the *how* of teaching” (p. 21). Planning can be defined as visualizing, creating, arranging, organizing, designing, guiding, managing, and making decisions about how and what to teach (Freiberg, & Driscoll, 2000). A large portion of a teacher’s time is spent planning what they will do during class. Research clearly demonstrates that teacher plans have a significant impact on what actually takes place in the classroom (Reiser & Mory, 1991). Teachers navigate environments that are very complex with variables including a wide

range of abilities, motivation levels, and interest levels amongst their students (Doyle & Carter, 1987). Because many of the variables teachers face each day are unpredictable, it is impossible to be completely prepared for them all. Therefore, it is imperative that teachers plan carefully those elements of instruction that are under their control. This frees them up to solve unexpected problems as they arise (Bellon et al., 1992).

Another important impact of instructional planning is the feeling of security and confidence it provides the teacher when done well. As teachers act on their responsibility to provide effective instruction, they often plan and implement a series of routines to manage the various aspects of the classroom effectively (Borko & Niles, 1987; Shavelson, 1983). When routines and procedures are implemented consistently, the teacher is able to free up cognitive attention to other aspects of teaching. Until this happens, teachers feel like they are just trying to survive. The importance of instructional planning is commonly understood. The evidence is clear that quality instruction is inseparable from quality planning. The study of expert rural teacher instructional planning will contribute to the understanding of one of the most critical actions undertaken by teachers: daily instructional planning.

Philosophies, Models, Practices, and Processes

According to Freiberg and Driscoll (2000), there are four distinct phases of instructional planning. First is the preplanning phase when teachers mentally picture the activities and resources needed, next the active planning phase indicating the teacher has committed to a specific course of action, followed by the third phase of ongoing planning

regarding the adjustments made to the plan during instruction, and finally, the post-planning phase when the teacher reflects on how the lesson went. Bellon and colleagues (1992) also described instructional planning as consisting of three processes: preactive, interactive, and reflective. The preactive phase is characterized by teachers making decisions related to content, pacing, allocation of time, and structuring activities. In the interactive phase, teachers make decisions regarding the use of time, transitions, success rate, monitoring, and responses to spontaneous incidents. The reflective phase is a time when teachers make decisions related to feedback, praise, use of ideas, criticism, and student response to instruction.

The common elements of instructional planning found across research studies and reports are goals, objectives, teaching and learning strategies, materials, feedback, and assessment (Freiberg & Driscoll, 2000). Although there is consensus that instructional planning is important, there is no widespread agreement on how it should be done (Tolman & Hardy, 1999). Bellon and colleagues (1992) explained that a planning process based on clear goals and learning objectives is the type of planning most often taught in the preservice and inservice programs for teachers and was first developed by Tyler (1949). However, this planning process is rarely used by teachers (Gage & Berliner, 1984). Instead, teachers most often place priority on decisions regarding the activity or the task rather than the goals or objectives (Shavelson, 1987).

In addition to the planning phases, Bellon and colleagues (1992) described two broad types of planning. These are comprehensive planning and incremental planning. Comprehensive planning deals with long-term decisions while incremental planning is

based on day-to-day decisions. The focus of the current study examined instructional planning at the incremental planning level. Gagne, Briggs, and Wagner (1988) described the instructional planning process as an instructional events design model. In this model the teacher moves sequentially through nine events as they plan. These events include: gaining attention, informing the learner of the objective, stimulating recall of prerequisite learning, presenting the stimulus materials, providing learner guidance, eliciting the performance, providing feedback about performance correctness, assessing the performance, and enhancing retention and transfer.

Hunter's (1976) lesson cycle model followed a similar sequence of events using an anticipatory set, providing the objective/purpose, instructional input, modeling, checking for understanding, monitoring and adjusting, guided practice, independent practice, and closure. Rosenshine and Stevens (1986) developed an instructional planning model after observing teachers who were able to increase student achievement with the use of consistent patterns of instructional functions. These functions included: daily review, teach new content, student practice, feedback/corrections, independent practice, and reviews.

Neely (1986) found that if teachers asked themselves 16 questions in an effort to self-monitor, their instructional planning improved. These questions were as follows: How should I plan for the seating arrangement to use during this lesson? Which students have special needs that should be attended to during the lesson? What discipline and management techniques will I incorporate? What role will I take on during this lesson? Where will I place the materials I have listed? How well do I understand the content of

the lessons? What changes will I feel most comfortable with during the lesson? Why should I teach this lesson? Is this going to be too easy/difficult for this group? What attention do I need to give the other students while I'm working with this small group? How will I handle interruptions to limit interference in this lesson? How will I check on student understanding? What are my alternative plans if problems arise in this first plan? How will I conclude the lesson? What will students do as this lesson ends? How will I make transitions to the next lesson? (p. 31)

According to Bloom (1976) the context of the learning environment and the quality of instruction determine the learning outcomes. Calderhead (1987) estimated that about 2 hours a day are spent by teachers in some aspect of daily planning. Clark and Yinger (1979) found that some teachers estimated their time spent planning to comprise 10 to 20% of their time.

Many instructional planning processes and philosophies contain similar elements. According to Bellon and colleagues (1992), instructional plans should include specific learning objectives that are consistent with curriculum goals and written to address the needs of a specific group of students. Interestingly, they found that many teachers confuse objectives, goals, and activities: "A number of teachers have told us that their objective for the day was to get through a certain amount of material" (p. 53). This is not a learning objective at all, but rather a matter of curriculum or content.

Flynn, Mesibov, Vermette, and Smith (2004) developed a two-step lesson planning model that consisted of the exploratory phase and the discovery phase. The exploratory phase is intended to prepare students for the discovery phase. It is

characterized by grabbing the learner's attention and carefully crafted activities that stimulate prior knowledge. The discovery phase consists of the presentation of authentic performance tasks. By engaging in the learning task students both learn the subject matter and demonstrate their understanding.

The backwards design model presented by Wiggins and McTighe (2005) made the argument that just as other professionals such as architects and engineers design their products by first identifying client needs, instructional designers must likewise first consider the desired results of their instruction before making other pedagogical decisions. The first step in the backwards design model is to identify the desired results of the instruction. Second, the educator determines what will constitute acceptable evidence that the learning has occurred. A plan consisting of learning activities and instruction is developed only after completion of the first two steps.

Jones, Vermette, and Jones (2009) found that by combining Wiggins and McTighe's (2005) backwards design model designed for larger units with the two-step lesson planning model (Flynn et al., 2004) designed for individual lesson plans, lessons can become more objectives based. The sequence of the lesson is designed with the end in mind resulting in greater attention to the lesson objectives.

With the increased use of technology in classrooms and the prevalence of web-based tools, it makes sense that a lesson-planning framework would emerge which proposes the use of a variety of technological tools in the development of instructional plans. He and Hartley (2010) suggested teachers start creating a lesson plan with a web-based lesson planner in which they should identify, link, and embed content into the

lesson plan. Consultation with online lesson plan databases and case libraries is required. Teachers should share their plans using blogs and wikis in order to elicit feedback from others. Later, the teacher will update the lesson plan using the web-based lesson planner. Finally, the lesson is to be saved to a computer desktop from the web-based lesson planner and adjustments are made as needed.

Archer and Hughes' (2011) explicit instruction lesson planning model was very similar to Hunter's (1982) model, but they changed the teaching language. Instead of talking of talking about modeling, many teachers simply think of modeling as "I do." The Archer and Hughes model followed the sequence of gaining student attention, review, preview, I do, we do, you do, review, preview, and assign independent work.

The use of professional learning communities as a vehicle to implement professional development has become popular in recent years. DuFour, DuFour, Eaker, and Many (2010) proposed that answering these four essential questions will lead to better instructional planning: What do we want students to learn? How will we know if they learned it? What will we do when students do not master the learning? What will we do when some students learn quickly?

Teachers not only plan for how they will deliver their instruction, but they must also make decisions regarding what will be taught (Brandt, 1988). These curriculum goals have been described as timeless statements of desired outcomes. These goals give direction to planning (Bellon & Handler, 1982). When daily planning is done, utilizing a well-structured and articulated curriculum, improvement in student achievement occurs (Rosenshine, 1983). Teachers make curriculum decisions based on several factors

including: (a) what will be tested, (b) content rigor, and (c) personal interest and attitude toward the content (Squires, Huitt, & Segars, 1983). It should be noted, however, that when teachers make curriculum decisions based on their own needs, values and capabilities, student learning suffers (Berliner, 1984).

Another critical aspect of instructional planning is the structure of learning activities. This is also described as the organization of student interactions. When teachers coordinate the structure of student interactions in their classrooms with curriculum goals, great benefits can result (Bellon et al., 1992). Instructional planning requires teachers to make decisions about the activities that will lead to the acquisition of the curriculum goals and learning objectives. Activities are the patterns of behavior and interactions between the students and the teacher. Planning for activities involves the integration of the behavioral setting, the curriculum, and teacher actions (Gump, 1987). A variety of activities commonly found in elementary classrooms include: housekeeping, play, games, silent reading, presentations, seatwork, and reading groups (Doyle, 1986). Planning for activities requires teachers to make decisions about “student engagement, grouping, seating arrangements, variety of activities, materials, reward structure, and type of independent practice” (Bellon et al., 1992, p. 34).

John (2006) sought to move away from the objectives first model of planning and proposed a dialogical model of lesson planning that took into account context-dependency and planning itself as a practice. This dialogical model included two early stages of planning dealing with decisions regarding issues from behavior and tasks to resources and routines. An extended phase of planning includes teacher beliefs, learning

styles, and inclusion. Each component interacts with any other component in an unpredictable way. Therefore, it is difficult to reconstruct an accurate portrayal of the complex and interconnected nature of the elements of instructional planning within a model of instructional planning.

Panasuk and Todd (2005) used the four stages of lesson planning as a foundation for their investigation into the effectiveness of teacher lesson plans. These stages are intended to provide structure to the complexity of lesson planning while ensuring that assessment and consistency of student learning are embedded in the plan. First, objectives are formulated in terms of observable student behavior. Second, homework is designed to align with the objectives. Third, activities that reflect the objectives are designed for the purpose of advancing development and learning. Fourth, mental mathematics is used to activate prior knowledge and prepare students for new concepts.

Recent recognition of the diversity of student needs led Causton-Theoharis, Theoharis, and Trezek (2008) to develop a lesson-planning template for inclusive instruction. This template consists of five sections. First, the lesson context section requires the teacher to consider the larger curricular picture along with the essence of the learners. Teachers select three target students. Next, in the lesson content section, the teacher sets goals, standards and meaningful objectives. Teachers must consider how to alter the content for any target student. Then, the lesson product is the section where the teacher decides how students will demonstrate their learning. Teachers are challenged to find creative and innovative ways to assess authentically. Next, the lesson process section requires teachers to think creatively about how to differentiate the lesson to meet

individual needs, how to engage students, and how to present information. Finally, the final section is the lesson outline. Teachers write the lesson plan in terms of introduction, body, and conclusion. They also determine a strategy to have students organize their own learning.

There are many common elements of planning articulated in the instructional planning models listed here. The common elements include curricular goals, lesson objective, materials, modeling, supported practice, independent practice, assessment, feedback, and reflection. The Mixed Model of Instructional Planning (see Figure 1) is a proposed visual representation of a model for instructional planning that incorporates the common elements of all the various instructional planning models discussed above. In this model, the teacher passes the curricular goals and learning objectives through a filter of knowledge of the educational setting and knowledge of the students. The teacher's plans for materials, modeling, supported practice, and individual practice will be influenced by the knowledge the teacher possesses of the educational setting and the students themselves. However, planning is not finished when the lesson begins. Teachers continue to alter their plans and make adjustments depending on the responses they observe from the students. This disciplined improvisation can cause the teacher to use materials, model, and provide practice in a different way than originally planned. Teachers assess student learning and provide feedback. Teachers may consult other teachers as well as various resources as they make decisions regarding any part of the planning model. At the conclusion of the lesson, teachers reflect. This reflection adds to the knowledge the teacher has concerning the educational setting and the students. This

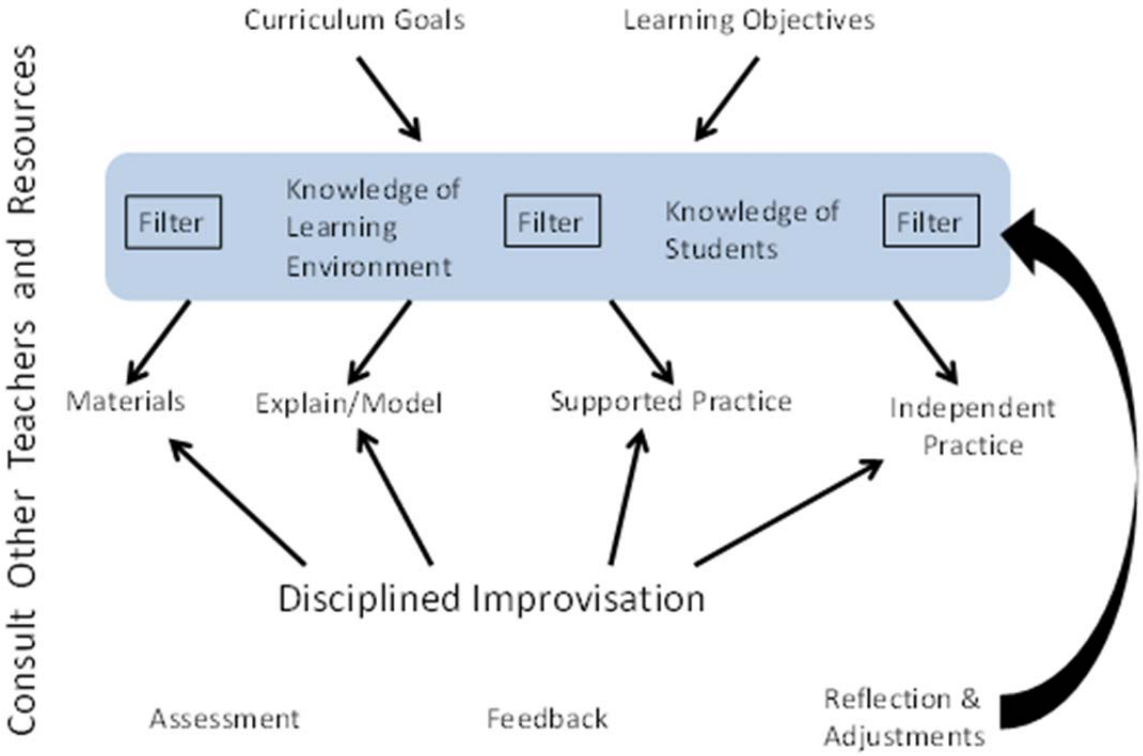


Figure 1. Mixed model of instructional planning. The teacher begins with curricular goals and learning objectives that are then passed through a filter consisting of the teacher's knowledge of the educational setting and students. This teacher knowledge influences the materials, modeling, and practice activities. During the lesson, teachers improvise based on the responses they receive and due to other unpredictable situations. Students are assessed, feedback is provided and the teacher reflects by adding new knowledge about the educational setting and the students that then acts as a filter for the next planning session.

building of knowledge acts to further improve the filtering process for the next planning session.

There are many models, philosophies, and practices regarding instructional planning. Most of them are simply iterations of the same objectives first model introduced by Tyler (1949). However, a few different ideas contribute greatly to the literature. The dialogical approach (John, 2006) casts a different light on teacher planning

by including the context and teacher beliefs while Sawyer's (2004) disciplined improvisation captures the essence of the chaos theory and how it applies to instructional planning. These concepts can be merged into one model of instructional planning entitled the Mixed Model of Instructional Planning (see Figure 1). This new model attempts to apply the most common elements of instructional planning identified in the research literature and incorporates the elements of some non-traditional approaches to provide a visual representation of effective elements of instructional planning.

Research Examining Instructional Planning and Teacher Thinking

Tyler's (1949) oft-cited book *Basic Principles of Curriculum and Instruction* has been the voice of reason in teacher planning for over 60 years. Tyler's premise was that there are four steps that must be followed in order to plan effective instruction. The first step was to identify the purpose or the objective of the instruction. The second step was to determine the educational experiences or activities that were most likely to fulfill the purpose. The third step involved, organizing the activities in a way that lead to the realization of the objective. The fourth and final step was to assess the learning in order to know if the desired outcome was accomplished.

Tyler's (1949) model, along with its many variations is the planning model most teacher education programs expose their preservice teachers to. It is often referred to as the *objectives-first* model (Reiser & Mory, 1991). It can be deduced that most teachers know the objectives-first model as the main formula for planning because they have learned this model or a variation of it. Surprisingly, a large body of research indicates that

when teachers actually plan, they do not follow this model (Beyerbach, 1988; Reiser, 1994).

Peterson, Marx, and Clark (1978) used a think-aloud technique to examine 12 experienced teachers during a 90-minute session of planning for a social studies lesson. They found that the most referenced planning area according to teacher statements was dealing with the content, or the subject matter. The next largest proportion of teacher planning statements had to do with instructional processes or activities. A smaller proportion of statements expressed concern over the materials and the learner. The smallest proportion of teacher planning statements in this session dealt with the lesson objectives or desired student outcomes. In short, the *objectives-first* model appears to be *objectives-last* in practice. It appears that there exists incongruity between the objectives-first model and the demands of real-life classroom instruction (Shavelson, 1983).

The flaws in the Peterson and colleagues' (1978) study are similar to the flaws found in most studies of this kind. First, the participant teachers were not selected because of superior ability to influence student learning. This means that some or all of these teachers could have been underperforming or poor teachers who were not experts of the instructional planning process. If this was the case, the results of their study would show us little about what effective teachers think and more about how ineffective teachers think about planning. Second, the teachers were placed in a simulated situation with unfamiliar students. This setting was inconsistent with the reality of the daily planning strategies of a teacher who taught the same students every day and over the course of a full school year. Teacher knowledge of students is a major influencing factor

of instructional planning, but was absent in the Petersen and colleagues' study. The current study responded to both of these flaws with a purposeful selection of participants and an examination of teacher planning which took place in their real life setting and dealing with their own students.

In the 1970s, research on teacher decision-making determined that teachers attend to the instructional activity as the basic unit of planning and do not teach toward objectives, instructional content is a major focus of teacher planning and decision making, the beliefs found in the general social context of the school impact the teacher's beliefs and in turn impact teacher thinking and behavior, and that teacher behavior is directly impacted by their decisions or plans either unconsciously or consciously (Clark, Wildfong, & Yinger, 1978; Clark & Yinger, 1979; Duffy, 1977; Marland, 1977; Shavelson, Cadwell, & Izu, 1977; Yinger, 1977). Clark and Yinger reported on three studies on teacher planning. Their findings suggested that learning objectives are seldom the starting point for planning. They also learned that teachers often limit their planning to the resources they have available on hand. The most common type of lesson plan was simply a list of topics to be covered. It was also found that the completion of planning added psychological benefits such as direction, security, and confidence. However, with no attempt to differentiate between effective and ineffective teachers, the study has limited value to the practitioner.

Another significant study in the area of lesson planning was conducted by Zahoric (1975), who attempted to extend the knowledge base of what teachers actually do as they prepare to teach. In this study, teachers were asked to write a list of the decisions they

made prior to teaching in the order they usually made them and to give examples where applicable. The writing responses of 194 teachers were analyzed. It is interesting to note that many of the teachers in this study planned for activities before considering any other planning decisions. Only 54% of the teachers first made decisions about objectives or learning goals. Again, this sampling of 194 teachers was limited. The random sample undoubtedly included effective and ineffective teachers at an unknown ratio. These findings would be more meaningful to the practitioner if the planning practices could be linked to the way expert teachers think about planning instead of just teachers in general. Additionally, reasons for planning decisions were not shared. Could it be that teachers do not spend much time thinking about objectives because these were provided within district curriculum guides or textbook programs? Although teachers do not overtly reflect on their objectives, there is some evidence to suggest that learning objectives are kept clearly in mind (Reiser & Mory, 1991). This may be a result of the intentional embedding of learning objectives into instructional programs and lesson materials, requiring less teacher attention.

In spite of any misgivings one might have about such research findings, the consistent theme in these studies is that a systematic approach to planning is not followed. The study conducted by Neale, Pace, and Case (1983) was a case in point. The study examined the planning behaviors of preservice and practicing teachers. Although all had been trained to use a systematic planning model, less than half of the teachers actually used it when they planned to teach lessons to students.

Naff Cain (1989) noticed that some of the qualitative research studies attempting

to explain how teachers plan their lessons (i.e., Yinger & Clark, 1982) indicated that some teachers follow a thinking process that more closely resembles the writing process models employed by creative writers. This prompted the development of a creative planning model. The elements of the creative planning model are:

- *Preplanning*. During this stage of planning, teachers observe students, conduct research within their content areas, brainstorm ideas, anticipate potential classroom management problems, and visualize the whole classroom environment.
- *Planning*. Teachers use educational theory and insights gained from the results of their informal classroom research to develop goals of instruction.
- *Postplanning*. Following the delivery of a lesson, teachers reflect on their experience. They identify the aspects of their plan that helped students, did not help students, and why. This reflection leads the teacher back to the preplanning stage.

The creative planning model is simple and logical. Unfortunately it lacks an emphasis on the specific strategies teachers use while they are planning and the reasons for using those strategies. Additionally, the two participants in the study were preservice teachers. We are left to wonder if this creative planning model is one followed by ineffective or effective teachers.

Broeckmans (1986) conducted a study of student teachers and their instructional planning. The findings resulted in a seven-step lesson-planning model that included: (1) inspection, interpretation, and appraisal of the lesson assignment; (2) exploration of the

content and possible activities of the lesson; (3) planning in a narrower sense to determine activities, topics to be covered, and development of details of the lesson; (4) filling out the form of the lesson plan; (5) check-up on the lesson represented in written plans; (6) revision of lesson plans as needed; and (7) directs preparation of interactive teaching. Broeckmans arrived at these steps through think-aloud protocols and observations. Like the majority of research on teacher lesson planning, participants typically include preservice teachers. Essentially, Broeckmans made a planning model for preservice teachers who are not yet teachers and who are far from being considered teaching experts.

The planning practices of twelve middle school teachers were studied by Brown (1988). In addition to interviews and think aloud activities, Brown used a 25-item Likert-scale questionnaire. It was found that these teachers did not use an objectives-first model but instead followed the steps of the model in a different order with the objective factoring in after other considerations. This study made no distinction between the planning processes of effective and ineffective teachers. Similarly, Strangis, Pringle, and Knopf (2006) found that although preservice teachers claimed to understand the importance of educational standards and objectives, they consistently made decisions about activities before making decisions about lesson objectives.

Tricarico and Yendol-Hoppey (2012) studied the apprentice teacher's ability to plan differentiated instruction in an urban elementary school. The study resulted in the finding that teachers who exhibited what the researchers called "self-regulation" had more success planning and implementing differentiated instruction than those who did

not. Self-regulation was defined as the teachers' conscious goal setting. The focus for these teachers was on the learning goal. When the goal was firmly in place, the teacher then made efforts to manipulate the situation/environment in order to reach the goal. Again, this research provides some insight but is limited in that it fails to specify the strategies teachers followed while planning to accomplish the learning objective.

Clark (1983) suggested that a glimpse at the pre-active domain of teacher thinking, or what happens in the mind of a teacher in preparation for teaching, will increase our understanding of more well-known features of planning. A glimpse, by definition, is not a permanent or complete understanding. Perhaps we never will develop a way to fully understand what others think, but a glimpse can be achieved through a variety of methods.

The research dealing with teacher thinking rests on two large assumptions. First, teachers are professionals much like surgeons who make judgments and decisions in an uncertain and complex environment. Second, the majority of teacher behavior is guided by their thoughts, judgments, and decisions (Shavelson, 1983). It is estimated that the decision-making model accounts for only 25% of teachers' thinking. Researchers ought to investigate what teachers are thinking the other 75% of the time (Mitchell & Marland, 1989). The examination of teacher thinking was the heart of my study. Descriptions of teacher instructional strategies abound, but achieving a glimpse into the thoughts of expert teachers as they plan could benefit instructional leaders as well as preservice, beginning, and struggling teachers.

Gill and Hoffman (2009) recognized the difficulty in attempting to understand

teacher thinking through their use of a self-report method. Their novel approach was to study teacher talk during shared planning time. Their investigation demonstrated that teacher beliefs regarding pedagogical content, curriculum, textbooks, and student ability impacted instructional planning directly. A more recent study (Kyung Ko, 2012) examined the planning practices of 45 preservice elementary school teachers. The findings were consistent with Zahoric (1975) and many other researchers over the years. Few preservice teachers considered instructional objectives to be most important when planning lessons. Instead, these teachers chose to focus on the content and activities to be used in the lesson.

Fifteen teachers were studied by Mumba, Chabalengula, Moore, and Hunter (2007) to identify common themes in their planning. They found that most unit planning included common procedures such as consulting other teachers, formulating goals and objectives, examining curriculum, developing activities, selecting assessments, and gathering materials. Antecedent factors such as student age and ability were also found to be common in instructional planning. These teachers also referenced resources as they planned such as existing lessons, technology, and textbooks. Reflection took place through student and teacher feedback as well as their own self-reflection practices.

Another study of teacher beliefs regarding lesson planning (Ghanaguru, Nair, & Yong, 2013) found that most respondents believed that lesson plans were a plan of action that provided a sense of direction for teachers. They viewed lesson plans as written and structured outlines. These participants stressed the importance of the learning objective and the learning activities and suggested that these two components of the lesson plan

have equal emphasis. According to the respondents, other crucial components of the lesson plan according to respondents were stages of the lesson and assessment tasks. Unlike some earlier research, this study found that 80% of the respondents maintained a high focus on learning objectives. Although these teachers believed in the importance of objectives, the study did not illuminate the influence the learning objectives had on actual planning. Simply believing one should focus on learning objectives is not the same as actually focusing on them during instructional planning.

In summary, I outline a few general observations from the research on instructional planning and teacher thinking while planning instruction. First, most of the research has been conducted using preservice or novice teachers as participants. This is a problem for those interested in how to plan effectively. Second, the few studies attempting to study expert teachers selected the participants with no consideration of student learning. Third, no studies were conducted in a rural setting. My study examined expert teachers who have consistently demonstrated that they have a superior ability to help students grow in their academic performance. Additionally, the rural setting in my study adds a much-needed component to the research literature examining the context of rural schools.

Expert Instructional Planners

Research attempting to define the problem-solving characteristics of experts compared to their novice counterparts has historically had as its motive the remediation or training of non-experts (Bransford, Brown, & Cocking, 1999; Chi, Glaser, & Farr,

1988). Although this research has provided valuable information, much research concerning expertise has not found its way into the practices of educators (Ericsson & Smith, 1991; Hatano & Oura, 2003). This disconnect exists in part because the bulk of the research on expertise was not conducted with the education environment in mind. Most research on expertise has been conducted in business, sports, and other work environments. There exist unique and complex sociocultural contexts within schools. Rather than simply attempting to apply the expertise research to education, it is clear that models and theories of expert behavior should be drawn directly from experiences in schools (Alexander, 2003). Therefore, a need exists for ongoing investigations of expert teachers and their practices. In this section I summarize some of the research that does exist regarding the differences between expert teachers and novice teachers.

It is difficult to determine what an *expert teacher* is. Moallem (1998) defined an experienced master teacher as on in possession of an undergraduate degree in education, no discipline or other serious problems, at least seven years of teaching experience, a good reputation among colleagues and students, knowledge regarding curriculum, excellent standing in the opinion of the principal, and an evaluation showing competency.

Alexander (2003) described expertise development as following three stages. Acclimation is the first stage in the development of expertise. This stage is characterized by the orientation to a new, complex, and unfamiliar environment. The second stage is competence. As knowledge base improves, individuals develop the fundamental knowledge and skills necessary to show competence. Finally, the proficiency/expertise stage is characterized by both depth and breadth of knowledge as well as a problem

finding orientation rather than a problem solving mentality.

Berliner (1986) outlined several reasons to study expert teachers. They provide us information about routines, schema, and scripts employed by experts in comparison to novices. They provide a starting place for instructing novices. They provide specific performances from which we can learn. They promote examination of the nature of expert pedagogy and facilitate the development of expert systems as has been done in the fields of physics, medicine and chess. They provide a shared body of technical knowledge to be referenced. They influence policy at the state level regarding licensure and tenure of teachers, and state and district policies in terms of defining the characteristics of a master teacher. Finally, they develop professional pride by knowing that some members of the teaching profession resemble experts in other fields.

"Experienced teachers think about and approach teaching differently than do novice teachers" (Bellon et al., 1992, p. 38). Due to experienced teachers' increased knowledge, they plan in distinctively different ways than do novices. Six different findings from research regarding the difference between expert and novice teachers help to frame the discussion. First, experienced teachers are able to recall many previous classroom events and therefore analyze current classroom situations more accurately (Peterson & Comeaux, 1987). Next, experienced teachers have plans in memory from previous experiences, but novice teachers have difficulty thinking through their plans (Calderhead, 1987). Third, experienced teachers plan for contingencies, routines, assessment, and feedback, but novice teachers tend to follow a trial and error planning process (Gagne, 1985). Fourth, experienced teachers employ a planning process that

takes into account prior student knowledge, adjustment of lesson structure, agendas, goals, and well-rehearsed actions. Novice teachers' planning efforts are often characterized by fragmented lessons, unclear signals, unclear goals, and little integration (Leinhardt, 1986). Fifth, expert teachers make inferences while novices view events literally. Experts recognize patterns, spend more time in problem solving, pay attention to social structures, use resources in nontraditional ways, and are metacognitive in their planning (Berliner, 1986). Expert teachers are not overly rigid in their planning. Their flexibility allows them to be responsive to student needs and adjust learning experiences resulting in a positive effect on student learning (Calderhead, 1984; Neely, 1986). Ornstein (1997) concluded that teachers would be able to improve their instructional planning by observing experienced teachers and conversing with them about their planning. My study provided this type of experience to any teacher seeking to improve their planning without the need for the teacher to identify the expert teachers, set up meeting times, and observe them as they plan. All of that work has been done for them as a product of my study.

Reiser (1994) conducted three different studies in order to investigate the ability of new teachers to employ a systems approach to instructional planning. The overall findings indicated that teachers could be trained to use a specific system for their planning, but most preservice teachers do not receive adequate training in instructional planning and without additional and ongoing support, teachers are unlikely to use a systems approach. Erickson and colleagues (2012) found that rural schools have limited access to professional development due to practical difficulties. As is true for other

professional development areas, training on how to develop an effective lesson is also more challenging to provide in a rural setting. The current study capitalized on one source rural schools can exploit for teacher training: their own expert teachers.

Leinhardt (1983) studied expert math teachers in Pittsburgh schools. Based on data from observations, video tapes of classes, preplanning interviews, and post interviews, the researcher characterized expert lessons as action agendas consisting of a list of action segments including presentation, shared presentation, drill, game drill, homework, guided practice, monitored practice, tutorials, reviews, tests and transitions. Although the research methods used in this study were similar the methods of my study, data on planning was only one small part of the data collection. My study dealt exclusively with the strategies and thought processes behind teacher planning. Another difference is the urban setting for Leinhardt's study as opposed to the rural location of my study.

Young, Reiser, and Dick (1998) devised a descriptive study of superior teachers to investigate their use, or the lack thereof, of systematic planning procedures. These authors defined systematic planning procedures similar to those first developed by Tyler (1949) with an emphasis on learning objectives first. Through face-to-face interviews and written surveys the authors found that, for the most part, superior teachers do not follow a systematic approach to planning. "The teachers in this study did not express much of a concern or interest in explicitly identifying objectives" (p. 76).

Similarities exist between the Young and colleagues (1998) study and my study. First, an attempt was made to identify the top tier of teachers. However, the participants

were selected based on their nomination for a teacher of the year award. Unfortunately no consideration was made as to which teachers actually have the most positive impact on student learning. Essentially, the *superior* teachers in this study were those who were the most popular, not necessarily those who were most effective. Second, an attempt was made to learn what teachers are thinking as they plan. The authors stated, “When considering the results of this study it is important to remember they are based on what the teachers in this study were able to recall, chose to reveal, and/or felt were most important at the time” (p. 71). The think-aloud strategy employed in my study was intended to improve the quality of the data by eliminating the requirement that the teacher *recall* what they were thinking. Instead, their thinking is recorded through the think aloud process.

Berliner (1988) compared and contrasted teacher thoughts on planning between expert and novice high school teachers. Researchers identified one group of teachers as experienced/expert classroom teachers and a second group as novice. All were teachers of mathematics and science. Through a simulated planning activity where each teacher was presented with a scenario that they were to take over one class for a colleague who had resigned midyear. Participants were given 40 minutes to prepare a lesson plan for the first two days of instruction. The teachers were observed through a one-way mirror and later were asked to explain their lesson plans. Differences emerged in the way experts and novices planned to take on their new responsibility. Experts were more critical of the teacher they were replacing. Expert plans for beginning the class differed from the novices. Experts established routines and procedures in the beginning. Experts expected

different information from the students. Finally, experts made plans to develop genuine relationships with the students.

Although Berliner (1988) began to set the stage for an examination of expert thinking during planning, very little attention is paid to the actual planning strategies of the teachers, the resources they consult, or the routines they follow while planning. Additionally, a disadvantage exists in the methods in that the *simulated planning activity* is not genuine and does not account for the knowledge that the teacher may have of individual student needs and the impact that knowledge may have during the teacher's real life planning.

Eight physical education teachers were studied through a think-aloud process followed by stimulated recall during and after planning two different lessons (Housner & Griffey, 1985). The findings showed that experienced teachers made more decisions about strategies than inexperienced teachers. Experienced teachers also focused more attention on individual student performance than did the novice teachers.

John (1991) conducted two case studies involving British student teachers' planning perspectives. Instructional planning for these teachers changed over time, beginning with idealism, moving into realism, and morphing into openness to new planning activity ideas. This "openness" to new and different planning strategies should be taken advantage of by offering student teachers information about what expert teachers do and think. My study provides a valuable resource to meet this need. John also found that beginning teachers placed little value on the standard or objective but rather put planning emphasis on the activities they wanted to use. Is this practice consistent with

experienced and expert teachers planning? My study illuminated different thinking on the part of the expert teacher when compared to the findings of other researchers whose sampling procedures did not take into account teacher effectiveness.

Expert teachers rarely achieve excellence in isolation. In fact, research in the last two decades suggests powerfully that sustained success is only possible through teaming up with others to accomplish a goal. “Quality teaching is not an individual accomplishment, it is the result of a collaborative culture that empowers teachers to team up to improve student learning beyond what any one of them can achieve alone” (Carroll, 2009, p. 13).

Success in the field of teaching is much more likely to come due to a collaborative effort. The benefits of collaboration among teachers are gains in student achievement, higher quality solutions to problems, increased teacher confidence, areas of strength and weakness balance out, support for new teachers, access to a large pool of ideas, increased access to materials, and a larger repertoire of methods (Little, 1990). Kimmel (2013) studied how an elementary school librarian planned collaboratively with a second grade team. Five different activities were found to be present during this collaborative planning. Orienting is when the team asks questions of itself to get started. These questions orient the team to the task at hand. Another activity is coordinating. This involves pulling together schedules and resources. Making connections is an activity that brought together pacing guides and connections among various content areas. The activity of making sense is when the team probes each other’s thoughts in order to understand students, pedagogy, and curriculum that none of them could have reached on

their own. Finally, drifting is the activity that might be considered to be off task except that it provides a way for team members to get to know each other on a personal level which facilitates the other activities.

Borko, Bellamy, and Sanders (1992) examined the differences in planning between student teachers and expert cooperating teachers. They found that expert teachers employed strategies to organize and keep track of successful lessons for future reference. They worked cooperatively with other teachers to develop yearly and unit plans at the beginning of the school year. Additionally they met with colleagues weekly to review weekly plans. Interestingly, expert teachers in this study did very little written planning outside of schedules. Conversely, novice teachers spent a large amount of time writing detailed lesson plans and securing materials and resources. It was found that when novice teachers did not have clearly written plans, they struggled to deliver instruction.

Experienced teachers are described as having an intuitive sense when it comes to anticipating how students will respond during different activities and task structures (Bellon et al., 1992). Additionally, these teachers ensure that their activities provide adequate time without leaving too much time left over and include a plan of activities for students who finish early (Doyle, 1979; Gage & Berliner, 1984).

Sternberg and Horvath (1995) proposed the conceptual development of an effective teacher prototype. They argued that although all expert teachers are not the same, they share “family resemblance” (p. 9) with each other. Therefore, the development of a prototype could serve as a point of comparison or a standard with

which to compare teachers. The degree of their resemblance to the prototype would indicate their expertise level. The researchers identified three basic differences between experts and novices. First, experts possessed a large knowledge base. Second, experts were more efficient. They accomplished more in less time than their novice peers. Third, experts were more insightful. They were able to more accurately anticipate appropriate solutions to problems. Some research suggests that expert teachers plan engaging and challenging lessons but do not feel the need to stick to those lessons with fidelity. Instead, in the act of teaching, these teachers respond to student cues. Their professional judgment, pedagogical expertise, and flexibility allowed them to deviate from the lesson plan and still provide support toward a specific teaching purpose (Boyd, 2012).

Taylor (1970) provided an example of a study designed to investigate how secondary teachers planned their courses, what criteria they used in planning, and how the criteria related to one another. However, the assumption made by Taylor was that the purpose of this research was not to discover whether or not teachers used effective principles in their planning, but rather to simply discover what principles they used. Taylor stated, “Questions of rightness and, for that matter, effectiveness can only be answered after it is known what principles are being applied” (p. 3). Although I agree that these principles must be discovered, I disagree that we must select from a list of planning principles that currently exist regardless of their effectiveness. In my study, I implemented a different method. I identified those teachers who demonstrated the ability to realize high levels of learning for students and investigated the planning strategies they employed. Although my study did not attempt to label any planning strategy as right or

best, the planning principles resulting from the study were principles employed by expert teachers, not teachers in general as in the case of many studies.

Although the study of expert teachers is valuable and necessary, Kennedy (2010) provided an important caution. Education researchers are just as likely as any others to fall prey to the fundamental attribution error. In other words, research on expert teachers may attribute success to personal qualities rather than situational influences. Researchers should be careful not to overestimate the influence of personal qualities and imagine that there is a one to one correspondence between the qualities of the expert teacher and student learning outcomes. Obviously there are many other variables involved. My study, however, was not designed to investigate teacher qualities, but rather to discover how they plan and why they plan as they do independent of their personal qualities.

After a decade of studying exemplary elementary reading teachers, Allington (2002) concluded that the best reading instruction occurred when teachers planned with what he calls the six T's in mind:

- *Time*. Teachers maintained a reading and writing to stuff ratio of 50/50. Extensive time was allocated for students to practice reading. Students do more guided reading, more independent reading, more social studies reading, and more science reading than did students in less effective classrooms.
- *Texts*. Teachers provided a rich supply of books that students can actually read. Students need enormous quantities of successful reading material. This reading material should allow students to read at a high level of accuracy, fluency, and comprehension.

- *Teaching*. Teachers gave direct, explicit demonstrations of cognitive strategies of good readers. They did not rely on commercial instructional packages. Instead, they crafted explicit demonstrations of skills and strategies. This instruction occurred in whole class, small group, and one on one settings.
- *Talk*. Teachers encouraged student talk that was purposeful. The talk was problem-posing and problem solving and related to curricular topics.
- *Tasks*. The types of tasks these teachers assigned were longer projects. Writing tasks would take 10 days or more. Many tasks integrated several content areas. Low-level worksheet-type tasks were replaced by more complex tasks.
- *Testing*. Evaluation of student work happened regularly and was based on effort and improvement more than just achievement. These teachers knew their students well enough to make the determination of how much effort and improvement the students made.

Although experience is a component of what makes a teacher an expert, experience should not be confused as being synonymous with expertise (Berliner, 1988). Berliner postulates that it is the combination of experience, motivation to excel, and certain metacognitive skills that enables an individual to learn from their experiences and through the process become transformed and emerge as experts in their field. The Berliner study defined expert teachers as those who were nominated as excellent by their principals, were judged by two or three independent and knowledgeable observers to exhibit excellent classroom teaching, had a minimum of 5 years' experience as a

classroom teacher.

I contend that although these criteria are important they are missing a critical element of instructional expertise. There is no mention of student learning. A teacher may be labeled as wonderful by all those who watch her perform in the classroom but the true test of a great teacher lies not in the perceptions of those who observe but rather in the level of learning taking place on behalf of the students. I propose the addition of student learning as another factor in identifying expert teachers.

Ryan (1986) articulated four stages of teacher development. The fantasy stage is when a teacher imagines a future classroom where the students eagerly await instruction and the teacher is as good as or better than the other teachers. The survival stage is that dangerous time when the fantasies are dashed away and the struggle for one's professional life begins. Next is the mastery stage. Teachers eventually become proficient at certain skills and feel comfortable in the classroom. The last stage is the impact stage. This is the stage when the teacher actually has the power to impact student learning at high levels. Many studies on teacher planning include teachers at all levels or exclusively within the fantasy and survival stages. My study was directed at those teachers who fall within the *impact* stage.

Summary

Although much research has been conducted for the purpose of investigating teacher planning, little is known about how instructional planning strategies are effectively constructed. There is a lack of research that describes and analyzes the

instructional planning strategies teachers use for planning and why they are used (Shavelson, 1983). Andrews and Goodson (1980) described the exceptional planning done by master teachers as if it were a collection of skills that certain teachers were born with rather than skills that were learned. They suggested that the instructional planning done by the master teacher was in need of further research.

Additionally, many of the studies cited here make no distinction between effective and ineffective teachers. The few studies that attempted to examine the planning of expert teachers did not include student achievement as a factor in identifying the experts. This study contributes to the body of research by taking a narrower look at the topic of teacher planning and including student achievement as a factor for the identification of expert teachers.

No studies were located in this review of the literature that examined teacher instructional planning in a rural setting. This study contributes to research on rural schools.

The intent of this research is for the reader to understand the strategies some expert rural teachers employed while planning daily instruction and to learn the reasons experts chose to employ particular planning strategies. This information helps to fill a need for novice teachers who are looking to learn a different way of thinking about planning. This study is also a resource for principals and professional developers as they work with their teachers on planning for the instructional day.

CHAPTER III

METHODS

Study Design

This study was conducted using a collective case study design with purposeful sampling and a within-case analysis followed by a cross-case analysis to interpret the meaning of the cases. Creswell (2013) explained that case study is an appropriate methodology when the researcher has clearly identifiable cases and boundaries and seeks to provide an in-depth understanding of the cases or a comparison of several cases. The cases were clearly identifiable as expert rural teachers and selected based on the criteria established. The boundary was also clear because the study was limited to one particular rural school district. The cases consisted of five expert teachers within this rural school district and comparisons were made from case to case. Stake (1995) called this type of case study an instrumental case study because it is intended to understand a specific issue, problem, or concern. The study used the logic of replication described by Yin (2009) as the procedures to select the five expert rural teachers were replicated.

Participants

The definition of an expert teacher for the purposes of this study required the teacher to meet each of the following criteria:

- An undergraduate degree in education (Moallem, 1998).
- At least five years of teaching experience (Huberman, 1985)

- Excellent standing in the opinion of the principal (Moallem, 1998)
- Three consecutive years of at least 150% of overall percentage of projected Rasch Unit (RIT) met or exceeded according to the reading Northwest Evaluation Association (NWEA) assessment. This percentage shows the proportion of the overall RIT growth projections achieved by the students. A student may make significant growth but not achieve their growth goal. All of that growth would be represented here in the overall projected RIT met or exceeded. Likewise, a student may make very little growth and still meet their growth goal. Only the growth is represented in the overall projected RIT met or exceeded. Performance of 100% is considered average, meaning the student growth equaled the projections. The higher the percentage, the higher the level of student learning.

As an example of what it looks like to meet 150% of overall percentage of projected RIT, Figure 2 shows the NWEA reports for two different teachers. The first teacher was able to help all of her students meet their growth goals. Additionally, the students grew so much from the fall assessment to the spring assessment that she achieved 338.9% more than average growth (100%). Conversely, only 33.3% of the second teacher's students met their growth goal and this teacher only realized a below average 83% overall growth.

The following steps were followed in order to identify expert teachers within a rural school district. First, a rank order list was created of teachers who show at least 150% overall percentage of projected RIT met or exceeded according to the NWEA

Teacher 1

Count of Students with Valid Beginning and Ending Term Scores	18
Count of Students who Met or Exceeded their Projected RIT	18
Percentage of Students who Met or Exceeded their Projected RIT	100.0%
Overall Percentage of Projected RIT Met or Exceeded	338.9%
Count of Students with INVALID Spring 2010 Test Scores	0
Count of Students with VALID Spring 2010 Test Scores	21
Spring 2010 Mean RIT	229.0
Spring 2010 Median RIT	231
Spring 2010 Standard Deviation	14.3

Teacher 2

Count of Students with Valid Beginning and Ending Term Scores	18
Count of Students who Met or Exceeded their Projected RIT	6
Percentage of Students who Met or Exceeded their Projected RIT	33.3%
Overall Percentage of Projected RIT Met or Exceeded	83.6%
Count of Students with INVALID Spring 2010 Test Scores	0
Count of Students with VALID Spring 2010 Test Scores	20
Spring 2010 Mean RIT	186.8
Spring 2010 Median RIT	184
Spring 2010 Standard Deviation	13.1

The total student growth divided by the total projected RITs expressed as a percentage. Shows the proportion of the overall RIT growth projections achieved by the students. Performance of 100% is considered average, meaning the student growth equaled the projections. Teacher 1 had very high student growth surpassing the projections. Teacher 2 had low student growth. This growth did not meet even the minimal expectations reflected in the projections.

Figure 2. NWEA reports for two different teachers. Teacher 1 shows a very high rate of student growth. The data for Teacher 2 indicates a below average rate of student growth. An average class would see a growth of 100%.

assessment for three consecutive years. Next, verification was sought that each of the teachers on these lists possessed a current and valid level 2 Utah teaching license indicating completion of an undergraduate degree in education. Third, verification was sought that each of the teachers on these lists had taught for at least five years. Huberman (1985) found that it took no less than 5 years for teachers to master the problems that perplex first-year teachers. Fourth, verification was sought that each of the teachers on these lists was in excellent standing in the opinion of the principal. Fifth, any teacher listed who did not possess each of these qualities was dropped from consideration. All those remaining were possible candidates for the study.

Table 1 shows the list of teachers in rank order based on the reading growth percentages over 3 years. Additionally, Table 1 shows the school in which the teacher

Table 1

Top 20 Teachers According to Progress Scores

Teacher ranking	School label and Title I designation	Grade level assignment	Average of 3 years progress scores
~~Teacher 1~~ Chose not to participate	School A—T1	4	216.13
Teacher 2—Selected	School A—T1	5	208.03
Teacher 3—Selected	School A—T1	3	197.20
~~Teacher 4~~ Instructional coach	School B—T1	4	171.60
Teacher 5—Selected	School C—T1	5	171.47
Teacher 6—Selected	School E—T1	4	170.03
~~Teacher 7~~ Teaches at the secondary level	School C—T1	4	170.00
~~Teacher 8~~ Currently an assistant principal	School B—T1	1	165.43
~~Teacher 9~~ No longer employed by district	School A—T1	4	162.83
~~Teacher 10~~ No longer employed by district	School C—T1	6	160.37
~~Teacher 11~~ No longer employed by district	School D	3	159.27
~~Teacher 12~~ Grade level too different from other candidates	School E—T1	1	159.27
Teacher 13—Selected	School F—T1	5	158.00
Teacher 14	School E—T1	2	158.00
Teacher 15	School B—T1	1	154.10
Teacher 16	School G	3	153.70
Teacher 17	School E—T1	3	152.10
Teacher 18	School D	1	151.77
Teacher 19	School F—T1	4	150.13
Teacher 20	School E—T1	2	149.60

was currently teaching and the grade level taught. The schools with the T1 label are Title I schools meaning that they serve a high percentage of students who qualify for free and reduced lunch services.

Once the teachers were placed in rank order according to student growth it became a simple process of elimination to select the teachers. Teacher 1 declined to

participate in the study. Teacher 4 was now an instructional coach and therefore had to be dropped from consideration. Teacher 7 was now teaching at the high school level so was not selected for participation. Teacher 8 was now an assistant principal and could not participate. Teachers 9, 10, and 11 had either moved or retired/resigned. Teacher 12 was dropped from consideration because, if selected, she would have been the only teacher participating in the study teaching a primary grade. All of the possible candidates selected prior to teacher 12 taught grades 3-5. For comparison purposes, I chose to stick with those grades. Teacher 13 became the final participant so I did not have to contact any other teachers.

Each teacher was given a number to identify them in the data analysis. This number had nothing to do with any portion of the selection process. I simply assigned a number to each applicant according to the order of when I was able to meet with each of them for the think aloud session. Thus, I collected think aloud data from teacher number 1 first and I collected think-aloud data from teacher number 5 last. The numbers were assigned based on my calendar. As no one else had access to my calendar, this mad the assignment of teacher numbers random and decreased the chances that teachers may be identified, thus maintaining confidentiality.

The teachers were assigned a pseudonym in order to facilitate the narrative nature of the qualitative study. I used the most common given names for males and females in the United States according to the 1990 census (United States Census Bureau, 1990). Mary had taught elementary school for 15 years. During her career she had taught first, third, fourth, and fifth grades. At the time of this study, she was teaching fifth grade. She

taught in a Title I school with an enrollment of 265 students in grades Kindergarten through fifth grade. Thirty-two percent of the students were minority students 54% of the students qualified for free and reduced lunch.

Linda had taught elementary school for 34 years and all of those years were in the fifth grade. This was her last year of teaching and has since retired. She taught in a Title I school with an enrollment of 456 students in grades Kindergarten through eighth grade. Sixty-nine percent of the students were minority students and 69% of the students qualified for free and reduced lunch.

James had taught elementary school for 6 years. He taught fourth grade all 6 years and was still at this grade level at the time of this study. He taught in a Title I school with an enrollment of 682 students in grades Kindergarten through fifth grade. Fifteen percent of the students were minority students and 44% of the students qualified for free and reduced lunch.

Barbara had taught elementary school for 10 years. During her career she had taught first, third, fourth, and fifth grades. At the time of this study, she was teaching third grade. She taught at a Title I school with an enrollment of 689 students in grades Kindergarten through fifth grade. Nineteen percent of the students were minority students and 51% of the students qualified for free and reduced lunch.

Elizabeth had taught elementary school for 22 years. During her career she had taught first, fourth, and fifth grades. At the time of this study, she was teaching fifth grade. She teaches in a Title I school with an enrollment of 689 students in grades Kindergarten through fifth grade. Nineteen percent of the students were minority students

and 51% of the students qualified for free and reduced lunch.

The five teachers were teaching at four different schools. It is interesting to note that all four schools were Title I schools, indicating that they served students on the low end of the socioeconomic scale. As the main requirement for selection was student learning growth, these schools may have had an advantage as their students often come to these teachers far below grade level and thus have farther to go to reach grade level. However, the same scale was used for all teachers in all schools, so even the teachers in the more affluent schools were measured purely by growth and they could have performed just as well by achieving an equal amount of growth even if that growth occurred at and above grade level.

Data Collection

Four types of data were collected and analyzed. First, the think-aloud protocol was employed to record teacher thinking while teachers were in the act of planning for daily instruction. Teachers were asked to go through their regular instructional planning procedures with the expectation that they would think aloud as they planned. These planning sessions were recorded on video. Second, observations of the planned daily instruction took place. I observed the actual teaching of the lessons planned during the think aloud session and took field notes. Third, lesson plan documentation was analyzed. After analyzing the think aloud data, the observational data, and lesson documentation data, I was able to develop interview questions. Finally, teachers were interviewed and asked questions related to their lesson planning and the teaching of the lesson. These

interviews were audio recorded.

Think Aloud

Thinking aloud is a technique developed as early as the 1940s when de Groot (1946) studied the thought processes of chess players. A literature search by Fox, Ericsson, and Best (2010) found over 1,500 articles with references to thinking aloud along with other methods involving concurrent verbalization of thoughts. The think-aloud method is characterized by the subjects' verbal expression of their thinking in the moment that they are attending to a task. Participants are instructed to remain focused on the task while thinking aloud and to verbalize their thoughts. The researcher does not ask questions or require explanations or clarifications. It is common for participants to refrain from monitoring their own verbalization during this process. They tend to use incomplete sentences and phrases. Even though the verbalizations are often flawed grammatically, the participants rarely correct their speech errors due to their attention to the task (Ericsson & Simon, 1998).

Ericsson and Simon (1998) found that when participants were properly instructed in the think-aloud process there were no changes in their sequence of thoughts when compared to participants completing the same tasks silently. However, when think-aloud is used the researcher must be careful not to request descriptions or explanations because these requests will cause the participant to engage in additional cognitive processes that change or alter the thinking of the participant (Fox et al., 2010).

Fox and colleagues (2010) further asserted that in the absence of additional demands, participants are able to attend to the subordinate task of verbalizing information

while focusing on the primary task. The vocalization of inner speech, which is the goal of thinking aloud, should not be confused with introspection. Introspection requires explanation and description of one's thoughts, but think aloud does not. Suppose we were to ask students about how they solved math problems after they had completed an assignment. Although their responses may be completely in line with what they may have verbalized using the think-aloud procedure, if responses were different, based on the meta-analysis done by Fox and colleagues' scientists would favor the think-aloud over the self-report due to a large number factors that may contaminate the students' thoughts in the interval between the task and the self-reflection.

Someren, Barnard, and Sandberg (1994) outlined the practical procedures in obtaining think-aloud protocols:

- *Setting*. The subject must feel at ease, comfortable, and the room should be quiet. The environment should be conducive to the subject being able to focus on the task. The purpose of the research is explained.
- *Instruction*. The basic instruction is for the subject to perform the task and say out loud what comes to the mind. For example a study on architectural design by Hamel (1990) gave the following instructions: "You are asked to perform this task in the way you are used to… in your daily practice. It is important that you say aloud everything that you think or do in designing" (p. 43).
- *Warming up*. The subject is given an opportunity to practice thinking aloud. It is suggested that the practice task be in the same topic area as the actual think-aloud activity.

- *Behavior of the experimenter and prompting*. There should be no interference by the experimenter except when the subject stops talking. At that point the role of the experimenter is simply to say, “Keep on talking.”
- *Recording*. The session is video and/or audio recorded.
- *Transcription of the protocol*. Transcribing entails typing out verbatim everything that is said. The transcriber is to avoid interpretation in favor of a literal transcription.
- *Review*. The subject is given the opportunity to review the transcription and provide clarity and interpretation. Although these comments will be treated differently due to their retrospective nature, they can be helpful.

The setting for this study consisted of the classrooms belonging to the selected teachers. The setting could have changed as the teacher may have needed to leave the classroom to consult with another teacher or to locate resources. However, this did not occur. All data collection occurred in the classrooms of the participating teachers and nowhere else.

Before giving instructions, the teachers warmed up to thinking aloud. I intended to have the teachers perform a warm-up activity but I found that the participants fell into one of two categories that caused me to avoid the warm-up activity. One group of teachers were so ready to go that they immediately started thinking aloud and I did not want to stop them as they were doing so well at expressing their thinking. The other group expressed a high degree of nervousness so instead of doing a warm-up activity that may have made them more nervous, I instead visited with them, reassured them, provided

examples of a think aloud, and slowly eased them into the think aloud activity. I reminded the teachers that it was important to say aloud everything that was thought or done. I gave the instruction to plan for the following day's lessons just as the teacher normally would. Everything that was said and done was recorded via digital video recorder. The think-aloud sessions were transcribed and qualitative analysis was performed to identify categories and themes in the data. Interview questions were generated as a result of the analysis of these data. These interview questions were presented later to the teacher in a follow-up interview.

Observation

Observation is one of the most natural forms of data collection available to qualitative researchers (Hoepfl, 1997). The purpose of observations is to describe the meaning of what is observed from the perspective of the participants along with the settings, activities, and people. When coupled with interviews, observations can lead to a deeper understanding by providing knowledge of the context in which the study occurs. Additionally, the researcher may see things that the participant cannot or will not see themselves (Patton, 1990).

I attempted to maintain a passive presence during the observations (Hoepfl, 1997), not interacting with teachers and being as unobtrusive as possible (Schatzman & Strauss, 1973). Field notes, or running descriptions of the observed lessons were taken. The field notes consisted primarily of reminders of what took place during the lesson to serve as a memory aid and to facilitate recall of what transpired during the lesson (Lofland & Lofland, 1984). By coupling the observation with the think aloud, I was able

to compare what was planned to what was actually implemented. This provided valuable data that I used to generate questions for the interview.

Interview

During transcription and analysis of the think-aloud session and observational data, I generated questions concerning the planning strategies that were observed and verbalized. I started with a skeleton list of questions developed to include an investigation into each component of the mixed methods lesson-planning model (see Figure 1). I did this because I did not want to leave out any important aspect of the planning process simply because I failed to pick up on it during the analysis of the think aloud, document and observational data. Then, with my research questions as my guide, I watched the think aloud videos, looked at documentation samples and read over my field notes. I made notes of anything that was interesting or that appeared to address one of my research questions. These notes I later rewrote into questions. I then compared the two lists of questions. Any questions from the mixed methods planning model list that were not in some way addressed in the individualized question list were added to the individualized list.

I asked each of the teachers the questions specifically generated for them in an interview that lasted approximately one hour each. All interviews were conducted in the teachers' classrooms. During the interview, I often restated teacher responses for clarification purposes and asked follow-up questions in order to improve the accuracy of my interpretation of teacher answers. In some cases I skipped questions because while expounding upon an answer to a previous question the teacher had already made their

answer to the skipped question clear. The interviews were audio recorded via a digital audio recorder. This process was repeated for each of the five teachers.

Documentation of Planning Decisions

Documentation of daily instructional planning decisions were collected during the think aloud activities, observations, and interviews. Copies, photographs, and video of these documents were used to create the interview questions and were analyzed separately.

Data Analysis

In order for the data analysis in this study to be as valid, reliable, and as rigorous as possible, commonly practiced qualitative research analysis procedures were followed (Taylor-Powell & Renner, 2003). The analysis of data consisted of (a) getting to know the data, (b) focusing the analysis, (c) categorizing the information, (d) identifying patterns and connections within and between categories, and (e) interpreting the findings (Taylor-Powell & Renner, 2003).

My first opportunity to get to know the data was through the transcription process. First, I transcribed the video recordings of the think aloud activities. I connected the video camera to a big screen television in order to see and hear clearly. I typed every word the teachers and I said during the think aloud session. I also typed notes regarding the visual aspects of the think aloud. For example, the teachers would often talk about “this” or “that” and they would motion towards their plan book or the math program manual. These types of references were noted as well as any other visual representations

that seemed to be of interest. Then, I transcribed the observation field notes. This was basically a word for word transcription of what was hand written in the notebook. However, occasionally I would improve wording and complete unfinished sentences. Next, I transcribed the audio recordings of the interviews. Again, this was a word for word transcription.

While transcribing the data I was able to see some themes emerging and I wrote down the impressions that I had as comments in the word documents containing the transcriptions. After transcription was complete, I created a new document for analysis procedures. I pulled my research questions into the document and set up a coding system tailored to align with each of these questions. I decided to categorize information through the comments feature of Microsoft Word. I would highlight sections of text that contained important data and I would attach a comment to it. Any comment highlighted in purple referred to question number 1. Comments highlighted in yellow contained information pertaining to question number 2. If the comment was highlighted in green, it had to do with question number 3. Comments highlighted in blue were associated with question number 4. No highlight meant that the information did not necessarily pertain to any particular research question. Occasionally, it seemed that data referred to more than one research question. On these occasions I highlighted the comment in more than one color.

I then assigned each teacher a number so that I could reference them more easily. I did this by assigning a number 1 to the first teacher I was able to meet with chronologically and followed that pattern to the last. This seemed random enough to

provide an additional level of anonymity for the teachers.

Based on the notes I made and the impressions I had during the transcription of the data, I created a list of preset categories that seemed to be emerging from the data. I created a table in the analysis procedures document that contained a category description and a category code for each theme. I started out with 14 categories but I continued to add new emergent categories as I came across them and by the end of the analysis, there were 27 categories. Table 2 shows the list of categories with their codes and descriptions.

The coding of the data occurred as I read and reread the data. Each piece of data was cross referenced with the research questions and the categories. I highlighted the data and added a comment any time I thought there might be significance in the data. I labeled each comment with the number corresponding to the teacher involved in that piece of data along with the category code and then I highlighted the code and any additional comments with the color corresponding to the research question associated with that piece of data. Figure 3 shows an example of this coding system in the source data.

After reading through the data several times I reached a point where I believed I had achieved data saturation or in other words, I kept coming up with the same information and was not really adding anything new to the analysis. At that point I had almost 200 typed pages of data.

In order to facilitate the examination of the data, I created a Microsoft Excel spreadsheet to manage the large amount of data. The spreadsheet consisted of 747 rows of data categorized by data source, teacher, research question, category code, and raw text as shown in Figure 4.

Table 2

Category Definitions and Codes

Category (code)	Category definition
CG	Curriculum Goals—Decisions regarding “what” will be taught.
LO	Learning Objective—Decisions regarding what the students should be able to DO at the conclusion of the instruction.
KLE	Knowledge of the Learning Environment—resources, schedules, how things are done round here,
KOS	Knowledge Of Students—Knowing the essence of the learners. Their needs, academic strengths and deficiencies, background/history (school and home), behavior (what they can handle)
M	Materials - The “stuff” needed to teach the lesson.
EXL	Explain/Model—Teacher explains and or models the learning objective.
SP	Supported Practice—Also known as guided practice. Students practice the learning objective but with scaffold support from teacher and/or other students.
IP	Independent Practice—Students practice the learning objective without the support of the teacher or other students.
DI	Disciplined Improvisation—The teacher alters the course of the instruction based on unpredictable occurrences such as how students respond, interruptions, etc…
ASM	Assessment—The teacher attempts to determine the level to which a student or all students have mastered the learning objective.
FDB	Feedback—The teacher communicates the level to which a student or all students have mastered the learning objectives to the students themselves.
RFL	Reflection and Adjustment—The teacher thinks about how the lesson went. Notes what went well and what did not and makes adjustments for the future.
COT	Consult Other Teachers and Resources—Teachers seek out help through discussion with other teachers or through consultation of resources such as the internet or a book.
DOC	Documentation of Planning Decisions—The physical documentation such as written lesson plans, weekly plans or any other way to record instructional decisions.
TS	Teaching Strategies—The way in which teachers interact with their students including, for example, how they ask questions, model, have students interact with each other, etc…
MNU	Menu of Teaching Strategies—The idea that teachers have developed and become fluent in certain teaching strategies that they are able to draw from at any time as needed.
RTP	Routines and Patterns of Instruction—The stringing together of particular teaching strategies as a regular approach to teaching a particular subject or content.
STP	Starting Point for Planning—When faced with a new day or teaching situation, the first things the teacher thinks about at the inception of planning thought.
PRG	Program—Ideas related to the use, or the lack of use, of the established district program of instruction. Also referred to as a basal program.
PD	Professional Development—Ideas related to the acquisition of knowledge or skill through professional development activities.
TE	Trial and Error—An approach by the teacher where they try something to see if it will work, and if it doesn’t to try again with a different approach.

(*table continues*)

Category (code)	Category definition
EXP	Experience—The contribution of years of experience to the planning practices adopted by the teachers.
RVW	Review—References to the idea that what has been taught in the past must be reviewed regularly.
SCH	Students take Charge—When students take the role of teacher or learn on their own.
ATT	Attitude or Educational Philosophy—Very general or broad ideas regarding the field of education.
PRD	Prediction—The practice of envisioning how the lesson will go.
PUT	Pick Up Tomorrow—The idea that the teachers don't worry about how far they are going to get, but simply have the attitude of picking up tomorrow where they left off today.

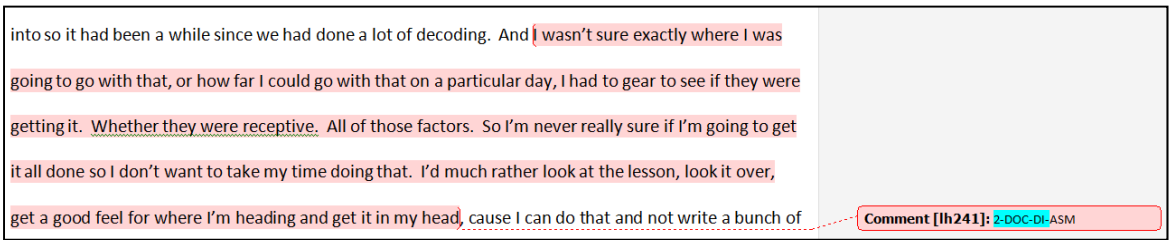


Figure 3. An example of the coding of the data. The text selected refers to three different codes; documentation, disciplined improvisation, and assessment. The highlighted text is blue, indicating that the data is related to research question number 4.

I ran a pivot table function in the spreadsheet as a way to identify the codes with the most significant amount of data. The pivot table provided me with the data I needed to create a graph representation of the number of references for each of the category codes. Figure 5 shows this graph. This graph was helpful as I began to determine which categories were most significant and ought to be reported on. I also made some connections. For example menu (MNU) and routines and patterns (RTP) were really just two sub categories of teaching strategies (TS).

	A	B	C	D	E	F
1	Data Source	Participant	Research Question	Main Category (Code)	Raw Data (text)	Comments
17	Interview	3	1	ASM	Academically but beyond academically. You have to understand which kids came to school hungry. Which kids are the kids that always want to answer for the teacher because you're going to ask specific harder questions that you're going to want them to answer. And you're also going to want to know where your kids are that aren't quite there yet, and so again those first days of talking to the kids is so important. If they say they've learned division. You put a problem up and say OK let's have the whole class solve that. Let's see where you're at. And then immediately the feedback you get from that lets you know. I've got 4 or 5 over here that still don't quite get it even though they've been discussing it so this is something that we are going to have to delve deeper into. But a lot of that is that instant formative assessment if you want to call it that. But you have to know where your kids are.	3-STP-KOS-ASM-Academically and personally.
18	Interview	3	1	ASM	I would look at the standards, I would put them in my friendly language, I would see where the kids are, and then I would try to transform them from wherever they are at to what the goals are for that grade.	3-CG-LO-ASM-STP-Content standards, core curriculum.

Figure 4. An example of how the data was entered into the spreadsheet. Each piece of data was entered into the spreadsheet with data source, participant, research question, category, raw data, and comments information in separate cells to facilitate the sorting and manipulation of the data.

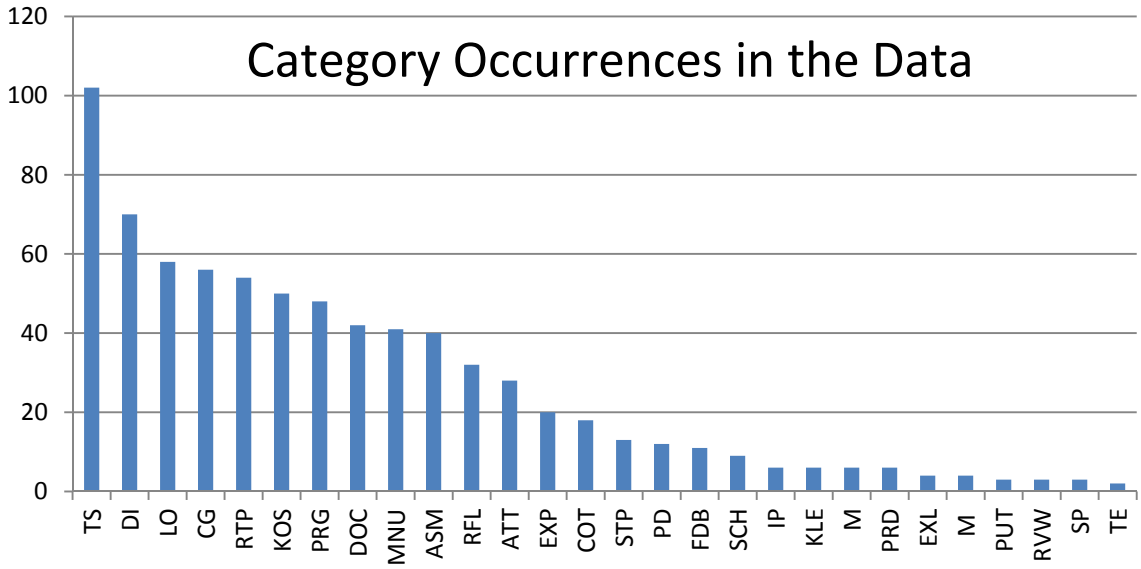


Figure 5. The number of pieces of data found for each of the categories. Over 100 pieces of data dealt with teaching strategies while only 2 pieces of data referred to trial and error.

I further sorted the data by extracting all of the data for each category code and creating a new sheet just for that code. Figure 6 shows how some of those sheets are organized. At the bottom of the figure the many different sheets corresponding to each code can be seen.

	A	B	C	D	E
1	Data Source	Participant	Research Question	Main Category (Code)	Raw Data (text)
2	Interview	1	1	DI	the unit prior to that we were reading a book called Pegasus. And it was on Greek Mythology. Well, I needed to teach Genres and it kind of went along with another genre and the kids were so into it that we took and built a unit with it and ran with it. And I just built it in to literacy. I had never done a Greek mythology unit before
	Interview	1	1	DI	How much of how you taught the lesson depended on the previous year's experience with that lesson? : You know we've been doing that for probably five or six years. And I think I probably evolve it a little bit every year. But it also depends on the students. So I may have a typical way that I do it but it may not work for every kid. So, like, using the big piece of paper with the story board, I've never done that before but I felt that it was necessary to...for those kids to have that visual. And some kids could just figure it out

COT DI DOC EXL EXP FDB IP KLE KOS LO M MNU PD PRD PRG PUT RFL RTP RVW SCH SP

Figure 6. Organization of the data sheets. The data was sorted by category and a separate sheet was created for each category in order to more easily access the data and search the raw data. Additionally, the text font was changed to the color red when it appeared to be text with particular interest and importance.

Next, I read through the data for each code and changed the text font to red for every quote or piece of data that seemed to be important or of particular interest related to a research question. Essentially, I selected the best examples and quotes to illustrate the point related to the code. From this process I was able to develop a list of key topics and important findings. These will be discussed in Chapter V.

Teaching Strategies

One key finding required further explanation here because it led to additional analysis of the data. It was found that the teachers participating in this study do not spend time thinking about the teaching strategies they will implement in their lessons, yet they use a wide variety of teaching strategies during their instruction. This phenomenon resulted in a separate analysis of the data to better understand the teaching strategies used by the teachers.

In order to identify each of the teaching strategies used by the teachers I read through each line of the observation data looking for evidence of strategies used by the teachers. The observation consisted of a description of what the teacher was doing throughout the lesson. For the purposes of this study, I define teaching strategies as those methods teachers use while interacting with students to help them achieve the learning objective. For each teaching strategy recorded in the data, I entered a row of data into an Excel spreadsheet. I entered the teacher who used the strategy, I named the strategy, described the strategy, gave a specific example of the strategy from the data when applicable, and I entered an order number to indicate the order that the strategy was used chronologically. A different sheet was created for each teacher. Each time a similar strategy was used by any teacher, I copied the row of data and pasted it in the sheet corresponding to the teacher who performed the strategy. Later, I assigned each strategy to a broader type of strategy based on the common features of lesson planning represented in Figure 1. Figure 7 shows the spreadsheet.

Teaching Strategy Spreadsheet

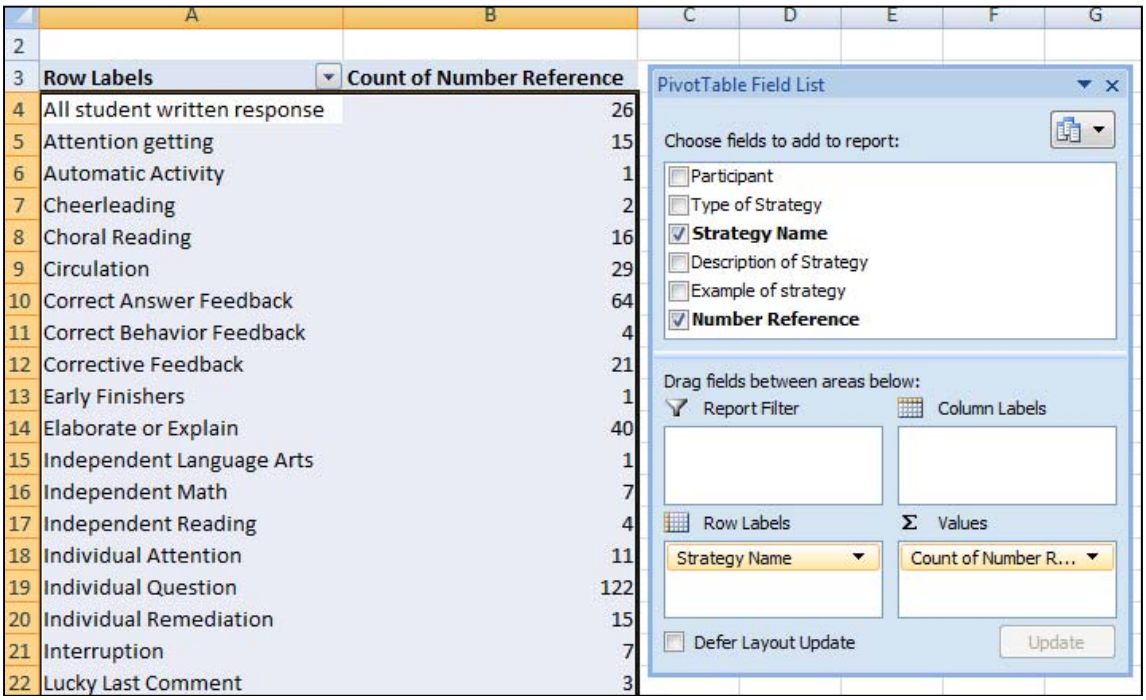
	A	B	C	D	E	F
1	Participant	Type of Strategy	Strategy Name	Description of Strategy	Example of strategy	Number Reference
2	3	Independent Practice	Automatic Activity	Students automatically do a learning procedure or routine.	Science board. Students automatically go up to the board and do it. Their names are on the board above the activity. Teacher simply observes.	1
3	3	Intervention	Individual Remediation	The teacher notices that the student is struggling and provides one on one instruction.	When showing their answer to a question on their white board, students get the wrong answer, then the teacher spends time with each student that got it wrong one on one to help them understand how to answer the question correctly.	2
4	3	Engagement	Attention getting	The teacher enacts some well practiced way of gaining the attention of the students.	Teacher counts backwards. Students are to be ready by the time the teacher gets to 1.	3
5	3	Explain/Model	Student as teacher	The teacher turns instruction over to a student who explains concepts, demonstrates, calls on students with questions, etc...	Student at the science board explaining what she did as the meteorologist for the day.	4

P-3 P-5 P-4 P-2 P-1 Strategies Types All Data Strategy Graph Type Graph

Figure 7. The spreadsheet used to collect, organize, and analyze the teaching strategy data. A different sheet was created for each participant and all the data was combined in one sheet. Other sheets contain the data analyzed through pivot table analysis.

Once all 893 separate strategies were listed, an analysis could be performed to examine the frequency of occurrence for each strategy and for each type of strategy. This was accomplished by the use of the pivot table feature in Excel. This tool allowed me to organize the data so as to find the number of times each teaching strategy was used. Figure 8 shows how this pivot table was set up along with some of the corresponding results.

Having the data collected in such a format allowed me to generate a graphic representation of the data in order to see the most frequently occurring strategies to the least frequently occurring strategies. Figure 9 depicts a portion of that graph.



Row Labels	Count of Number Reference
All student written response	26
Attention getting	15
Automatic Activity	1
Cheerleading	2
Choral Reading	16
Circulation	29
Correct Answer Feedback	64
Correct Behavior Feedback	4
Corrective Feedback	21
Early Finishers	1
Elaborate or Explain	40
Independent Language Arts	1
Independent Math	7
Independent Reading	4
Individual Attention	11
Individual Question	122
Individual Remediation	15
Interruption	7
Lucky Last Comment	3

Figure 8. The pivot table used to organize the data. This pivot table counted the number of times each strategy was entered and assigned a value to each strategy accordingly.

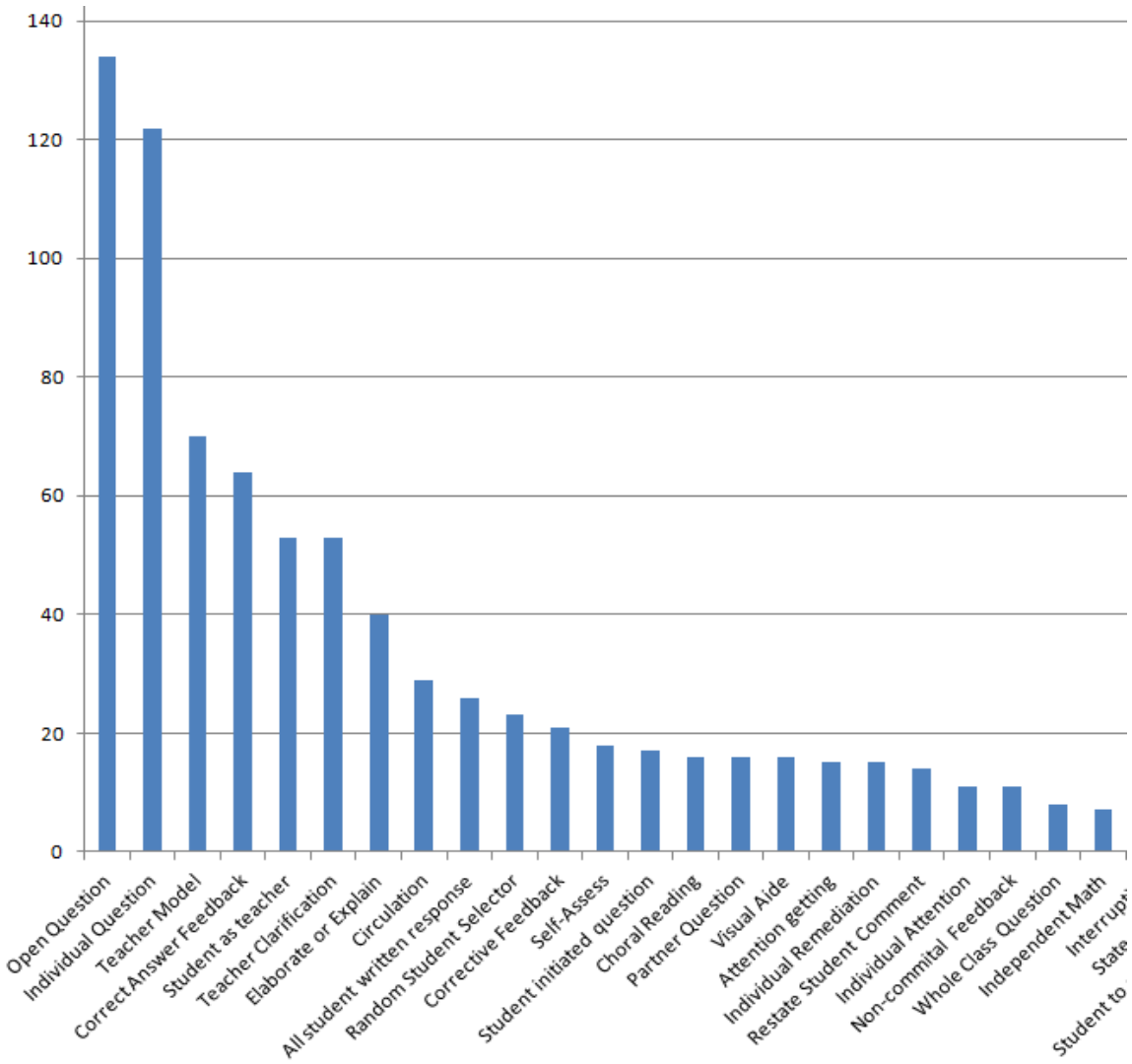


Figure 9. The number of times teachers in the study implemented the strategies. Only part of the graph is shown here.

An identical process was followed for the strategy types. A pivot table listed the types of strategies and the number of times they were used by the teachers. A graph was created as a visual representation of the data. These findings will be examined fully in Chapter IV.

Summary

Although like Clark (1983), I believe that this research study did not provide a complete solution to the complicated issues surrounding instructional planning for all teachers once and for all, I do believe that it is essential to continue the study of the planning strategies used by effective teachers because the tools, resources, standards, and political influences affecting teacher planning change continually. The methods employed in this study were designed carefully to follow identified steps for the collection and analysis of qualitative data in order to address issues of validity and reliability to the best of my ability and as expected in this type of research.

CHAPTER IV

FINDINGS

Introduction

The study of the research literature and the experts in the field of instructional planning led me to develop a mixed model of instructional planning (see Figure 1). This model was intended to put the common individual components of instructional planning in one place and in one format that could be easily understood and referenced. The model represents the characteristics of instructional planning that appeared to be commonly referenced in the research, the philosophies and models provided by experts in the field, and was specifically influenced by the work of Tyler (1949). The model provided a way to compare the findings in my study with the common characteristics of instructional planning espoused by researchers and other experts in the area of instructional planning.

The analysis of this study's data suggested a very different model of instructional planning than a study of the research and prevailing models of planning had produced. For the expert rural teachers participating in this study, the process of planning had less to do with documentation of instructional decisions and had more to do with knowing the needs of the students and improvising based on student responses as they related to curriculum goals and learning objectives. It was interesting to note the consistency of the views expressed by the five expert teachers. Their processes and philosophies regarding instructional planning were remarkably similar and differed in some ways from what was outlined in the research, as well as the processes and philosophies espoused by the

experts on instructional planning.

In this chapter, I present the findings and themes that emerged from the data. The themes used are as follows: (a) knowledge of students, (b) curriculum goals and learning objectives, (c) use of curricular programs, (d) documentation of decisions, (e) assessment, (f) teaching strategies, and (g) disciplined improvisation. Finally, a new model of instructional planning is presented based on the findings of the current study and as a way to further summarize the findings.

Knowledge of Students

Having knowledge about the students was a very important finding in this study and seemed to be the foundation or beginning point for all the other findings in the study. The teachers expressed the need to know students both academically and personally. Additionally, teachers revealed that they needed to know students on both an individual level and on a group or class level before they could effectively plan instruction.

Knowledge of Student Academic Ability

Teachers in this study used assessment to know their students' academic skill levels. They also reviewed cumulative files or interviewed students to gain an understanding of who the students were personally. Teachers also applied academic and personality characteristics to whole groups of students. For example, a class may be described as a talkative class, an academically above average class, or an academically below average class.

The inclusive approach of Causton-Theoharis and colleagues (2008) toward

lesson planning was very evident in how the teachers in this study thought about planning. All teachers expressed the vital importance of getting to know the needs of the students. In fact, four of the teachers explained that getting to know the students was the very first and most important step in planning for instruction. I asked the teachers if they were removed from their classroom and placed in a new classroom, in a new school, and in a different grade, what would they do first as they began to plan for instruction? Linda responded,

> First thing, I will be giving the kids assessments. Spelling, reading, writing, whatever I feel like, math, multiplication drills. The first week or so I would just assess them. I would be asking...I mean orally, written, whatever I need to do. I would look at past tests, I don't always go by those but that's a starting point. When asked why she would start this way, she replied,
>
> I want to know where they were coming from and what their needs were. I want to know what they're like. I want to get to know them first. Because I can't work with them until I get to know who they are.

She further elaborated, "And sometimes it takes me months to truly get to know them because I feel like you need to know the kids, and you teach the kid, you don't teach a subject." James gave a very similar response,

> I would probably start with walking in the school room that morning and getting to know the kids. And asking what have you been studying? What do you think? And when they say they've been learning something I would immediately say, can you show me what you've done on the board. How are you solving that and start to understand what the background of the kids are. Because really, you can't teach if you don't know where your kids are.

A critical finding of this study is the importance of knowing the students before planning instruction. Barbara said,

> I'd come up with or find an assessment to give with the standards, so that I knew where to begin. And because I'm me, I'd interview each one to read with and ask about their reading interests because that's what I love most.

Evidence of the teachers' belief that knowing the students was a priority was found repeatedly in the data collected. When things did not go as expected, James turned his attention to the needs of the students, "There are many moments every day when that is going to happen and you need to, again, address it and say, what are the needs of the students at this point?" He elaborated,

> If I was to ever have the question of what would I recommend to other teachers coming into the program, I would say relax, focus on the needs of your students not so much on the needs of, am I getting everything into the day that has to be there. Because as you are looking at the needs of your students, you're going to by far help them more than you are by getting a checklist mastered.

Mary was always making adjustments based on her knowledge of the students. Mary revealed,

> It also depends on the students. So I may have a typical way that I do it but it may not work for every kid. So, like, using the big piece of paper with the story board, I've never done that before but I felt that it was necessary...for those kids to have that visual.

Knowing the academic needs of students was of utmost importance to the teachers when they were considering the curriculum benchmarks and standards. Mary explained,

> Our language arts benchmark, I use that as a guide too and so I'll look at that and say, okay, we are really not getting main idea. So I really did a focus on main idea. I did a main lesson and then we did an interactive write and summarizing. So I did a lot based on that benchmark.

Knowing the students academically made it possible for expert teachers to provide differentiated instruction. Mary described one way this happened in her classroom, "I kept kids in for flex depending on what they were struggling with on the benchmark. We base those off the benchmark and power standards and all that."

James created a series of PowerPoint presentations that he used as the delivery

mechanism for his language instruction. He described how these presentations changed from year to year.

> I pull it up again next year and say, my kids need more help here, we need to change this, and so it is going to change appearance here, to where, towards the end of the year I was focusing on like doing just 2 or 3 in a day, we started to get more writing skills in, so it's slightly modified based on the needs of the students.

He went on to share more about the importance of knowing the academic needs of the students.

> If they say they've learned division. You put a problem up and say OK let's have the whole class solve that. Let's see where you're at. And then immediately the feedback you get from that lets you know. I've got 4 or 5 over here that still don't quite get it even though they've been discussing it so this is something that we are going to have to delve deeper into. But a lot of that is that instant formative assessment if you want to call it that.

Knowing the academic ability level of the students also allowed teachers to modify instruction as James described,

> I came up with the idea of I'm going to work with just my lows. And then I'm just going to let the other kids work with each other. They'll still have follow up, as you saw, on the whiteboards, on their journals, there's still daily follow up on what they're doing but they really don't need to meet with me and they can still grow just as much. And as I developed that, test scores showed that I don't have to meet with them as often. They still grew as much as I expected them to and beyond. The ones that needed me, I was still there for.

Because he knew the academic strengths and weaknesses of his students, James was able to develop a system of instruction that maximized the effectiveness of his time and effort.

Knowing Students Personally

Knowing students from an academic perspective is only part of what these expert teachers knew about their students. Linda described a process that she and her grade-level

teammate went through at the beginning of the school year to get to know their students on a personal level.

> What we did even before school started this year, they have a binder with the kids…and the teacher's comments on them. It's a black binder, and we went through every single student that we had and read and took notes. So we knew which kids had the attention problems, we knew which kids had family problems, deaths in the home, needed glasses, that kind of stuff. We spent a whole two days finding out everything we could about those kids.

A similar sentiment was expressed by James.

> You have to understand which kids came to school hungry. Which kids are the kids that always want to answer for the teacher because you're going to ask specific harder questions that you're going to want them to answer. And you're also going to want to know where your kids are that aren't quite there yet, and so again those first days of talking to the kids is so important. But you have to know where your kids are.

The teachers recognized the need to know students on an individual and personal level. Mary implemented a unit of instruction tying history to writing because of one student's needs,

> With that particular guy, he does not like to write, period. But I've found that he is excited about history.... And based on a couple of kids who do not like to write…that one fellow...I knew that he needed to see the end to understand the why. And there were a few others that needed that.

The result was the writing of photo stories by students from the perspective of people involved in the Civil War. This activity motivated one student to write who otherwise would not write.

The teachers were conscious of the needs of students at both ends of the ability level spectrum in their classes. Mary shared one reason she created a large poster to go along with her lesson.

I have a special needs, an autistic guy, and sometimes if I can give him a visual I

> can get it out of him. I have to sit with him one on one, which we did. But that was also kind of to help him to see that.

Later, referring to the same student Mary again articulated the reason she began to ask students to come to the front of the room and manipulate the interactive white board during her lesson, “I needed him to be engaged in some way, shape, or form. Because where we were kind of off his schedule, he was thrown off. So that was part of the reason I chose to do that.”

Possessing knowledge of students on an individual basis allows for subtle adjustments to the delivery of instruction that can have a positive impact on individual students. Linda described one way that this happens in her classroom as students fix errors in sentences for their daily language activity.

> When I have my home room class I would pick on the little ones that are strugglers first because I know they can give me capitals and a period. So they find some success, and then through the year they would start volunteering other things. But I want them to have that.

Barbara explained that her use of a particular strategy would depend on which student was at the board in front of the classroom. The strategy required the students to show hand gestures indicating whether or not they agreed with the answer that was demonstrated by the student. “Carol is pretty fluent up there but if it were Jerry or something it might not be right and then we’ll say, OK, well we better double check then.”

Knowing the students at the very top and the very bottom of the class was also critical. Barbara described how this type of knowledge impacted her planning.

> Like Jim. What’s something that will keep him interested or to help him see where it is going to go like when I taught multiplication, I already taught how to

> cross multiply, because some of the higher kids asked, what if it's a bigger number and so I had shown them. So some of these kids, they already know how to do that. But I always try to think of a way to lower it too so that it's understood by the lowest.

Knowledge of Students as a Group

The teachers also cultivated a knowledge of students at the group level, attributing characteristics, strengths, and needs to a whole group of students. This knowledge also had an impact on their planning decisions. At times, teachers would group students based on ability and this group instruction also helped meet student needs. For example, Mary explained why she chose to teach the above grade level kids first before instructing the students below grade level from the same lesson, "Well that first group is a little more forgiving. As far as level wise. And a lot of times, they will teach me things that I need to change in the next lesson. So that worked."

Teachers must not only decide what to teach and how to teach it, but they must also be aware of how long it will take to teach the lesson. The knowledge of students at the group level provided a basis for this type of decision. Linda explained, "So if I give them just enough they'll stay with me. But I've learned with this group that if I gave them 25 minutes they would become bored with me and become discipline problems." She later elaborated on the development of her knowledge of students at the group level, "At the first of the year it's a guessing game, but now at this time of the year I pretty well know where they are."

The knowledge of students at the group level is always evolving. Even from one moment to the next, teachers will adjust what they are doing based on the real-time

knowledge of students at the group level. Barbara explained what would cause her to decide to extend a lesson for an extra day.

> If the kids all seem like stressed out. And they'll all be stressed out and then sometimes even I need a break. Like, OK, what's a different way that I can approach this? And sometimes it's frustrating when none of them are getting it and you're like, why aren't you guys getting this? So I think, OK, what am I doing that I could change, like, what's a different way?

Some groups of students, according to the teachers, were better able to handle certain activities than others. This knowledge impacted instructional planning as it dictated the type of activity the teacher selected for the lesson. Elizabeth provided an example of this.

> Sometimes in a whole group, cause like, last year, some things I didn't do because I didn't think they could handle it, you know like experiments I'll just say. Like last year's group was just a little bit rowdy and I just didn't want to deal with it because I knew it was going to be utter chaos. And so I just wouldn't do it, we would just, you know what, we're going to read this article…. I wouldn't tell them that they weren't going to do the experiment, but I'd find something else, maybe on the computer that they would be more quiet and more involved than let's all gather around here and do this and they're all, half of them paying attention and half not.

For the teachers participating in this study, knowing students academically and personally was essential to planning. The teachers needed to know students on an individual basis as well as on a group level. These expert teachers worked to obtain an accurate understanding of abilities and characteristics of students. This knowledge became the basis from which learning goals were set and instructional plans designed.

Understanding Curriculum Goals and Learning Objectives

In this study, I also noted the importance of understanding curriculum goals and

learning objectives. The curriculum goals were the equivalent of the Utah state core curriculum standards. Curriculum goals are broad statements of the desired learning outcome. In contrast, the learning objective is the specific task or action that students are expected to be able to perform as a result of a particular lesson. An example of a curriculum goal for fourth grade is, “Fluently add and subtract multi-digit whole numbers using the standard algorithm” (Utah Education Network, 2011). However, the learning objective for a particular lesson may be a piece of the overall standard. For example, the learning objective for the standard on adding and subtracting multi-digit whole numbers would be that the students will be able to convert an addition problem from horizontal format to vertical format ensuring that the numbers are in neat rows in preparation for learning the algorithm. It is an important distinction but for the purposes of this study I have combined both terms in this section. This is because the nature of the investigation led to conversations about the curriculum goals and learning objectives without necessarily referring to them using those terms and the teachers made little distinction between them. The terms objective, standard, core, and curriculum were used interchangeably by teachers and in a broad sense to indicate the content of the expected learning.

Teachers in this study possessed a firm understanding of the curriculum goals and learning objectives for their grade levels. Barbara described why she referenced the core standards book so much at first but now refers to it less, “I feel like I’ve got it memorized now. Like I really feel like I know the content.” Elizabeth put it this way, “I knew what the objective was, what they were trying to do. So in my mind I try to organize it and I do

it by day." Experience seemed to play an important role in the acquisition of deeper knowledge and understanding of the curriculum goals and learning objectives. Barbara said,

> Just from teaching a range of ages, I've added things that I know will be helpful in...like expanded form, that's not even third grade but I know that helps them to understand place value. I did that every day in first grade even. It helps them understand place value and they will do it in fourth and fifth grade.

Linda also expressed the importance of experience in obtaining knowledge about the curriculum goals and learning objectives.

> I know that this is leading to this and this is what we've covered, what is building on this, what do they have already, and what do they need that they're missing. So they can understand this concept. So it's just. I think it's experience.

These experienced teachers could also navigate a curriculum map along with the Utah state core curriculum. The curriculum map, developed by the school district, arranged the Utah state standards in such a way as to indicate when the standards ought to be taught and outlined the expected duration of instruction, or how long it should take to teach the standards. The math curriculum map also included a correlation to the district adopted math program. The math curriculum map used by Barbara asked teachers to skip certain lessons in their math program. She explained,

> Well and I've pulled it up...lessons that are skipped. I've looked to see why. So I've looked at what wasn't there and what they took out and they added it to the end, like right now and it's stuff that's helpful but it wasn't power standards and some of the things aren't even on the third grade core that they've done which doesn't mean that it's not important, it's just that it shouldn't come first.

The teachers' demonstrated a solid knowledge of their grade level specific curriculum goals and learning objectives. Additionally, the findings of this study suggest that curriculum goals and learning objectives were a priority when expert teachers

planned. In fact, when asked what she starts with when planning, Mary stated, “Probably the first thought is what objective or standard am I working towards accomplishing and what unit.” She went on to add, “Once I kind of figure out what my objective is then I figure out a project and then I just try to develop the project.”

Linda explained the importance of curriculum goals and learning objectives as well, “My goals, knowing where they are heading in math, what sort of things they are going to truly need to know in math, that’s what I try and gear them towards.” She later explained further about the relationship between curriculum goals and learning objectives and her planning practices.

> I think knowing the curriculum as well as I do is a big plus. I’m afraid that if I went to a whole different grade it would be a different story. I think it’s just knowing my students and knowing what I want them to accomplish. Knowing what they need...I know what they need to be successful.

Describing what he would do in regards to what to teach if he were moved to a different grade level James answered,

> I would look at the standards. I would put them in my friendly language. I would see where the kids are, and then I would try to transform them from wherever they are at, to what the goals are for that grade.

Not only did the teachers consider curriculum goals and learning objectives early in their planning process, but they each placed a very high priority on them. Linda described,

> Knowing what they’re supposed to know and where they are supposed to go, that’s where I want to head. And I don’t want to waste their time with problems that are not going to reach that goal. I don’t want detours I guess you could say.

Additionally she shared an experience when she and the other fifth-grade teacher in the school got together in early April to plan.

> As we were getting closer to the end of the year, Betty and I evaluated which skills were most critical that we needed to pick up first and then we could go back and pick up the skills that were less critical... I usually go sequentially but because we're closer to the end of the year, I wanted to pick the things that are most critical.

James recalled a defining moment in his career that made him realize how important knowing the curriculum was, "I finished the school year and the students still didn't know area and perimeter. And the next year I was not going to let a single kid go without knowing area and perimeter." His intense focus on this curriculum goal resulted in changes to his instruction which, in turn, led to outstanding student learning. He continued, "If there's a concept the kids just aren't getting, it goes up on the wall so that it's there for the rest of the year."

As demonstrated above, the teachers in this study maintained a focus on the curriculum goals and learning objectives as they planned their lessons. However, these teachers narrowed their focus even more by identifying what they called power standards. Power standards, according to these teachers, are standards selected from the Utah state core curriculum that have been determined by the teachers to be most important and critical for students to learn. Barbara explained, "Well, the power standards are the things that I'll focus on every single day. But I'll still follow the core and the maps give me a scope and sequence." James remarked,

> I'm hitting prefixes, suffixes, homonyms, facts and opinions, vocabulary, apostrophes, writing skills, figurative language, word analysis, compound words and reference skills. So every week they are hitting our focused power standards as a whole class. And so it's taught the whole year and every week they're seeing a bit and parts of it.

The book *Focus: Elevating the Essentials to Radically Improve Student Learning*

(Schmoker, 2011) was mentioned by two teachers as being helpful in organizing their instruction and prioritizing instructional time. Barbara explained why the book was important to her.

> That book has taught me that all this stuff, like all these little things don't matter and that less is more, so it's made me just I don't know, like all the little things that you start thinking that you're not doing. It's just made me focus on reading and giving the kids time to read and power standards, really just focusing and instead of looking at that whole core and thinking that you have to like . . . and that's overwhelming even for a veteran teacher to look at every single thing that you have to teach. And it's just taught me to focus on what's most important and what's going to have those kids most successful at the next grade level.

She described the practical application of this idea.

> At the beginning of the school year I just did every day counts. And we took the first benchmark and my kids blew it. And so I just thought, if I change everything on that calendar to match every one of the power standards, then they would be hitting it every single day. So I took everything down, and everything up there is home-made. I made it all myself. And it's simple.

Similarly, Elizabeth shared her approach to the same situation of knowing what to focus on and how to organize instruction, "It's still the power standards. We want to make sure that they get it so it's just one problem of each, each day, an adding fractions, a subtraction one, a multiply…you know just throwing those in."

This keen attention to curriculum goals and learning objectives can also be understood through the types of resources teachers chose to reference during the process of planning for instruction. Mary remarked, "I look at the curriculum, the curriculum map. And I actually redid ours, the language arts one. You see that colored chart there? I redid it because it didn't make sense to me the way it was done." She also added, "I do look at the (district web site). I look through that too." The curriculum map for language arts was a district level guide that indicated which Utah state core curriculum standards

should be taught during each month of the school year. One way to access this document was through the website mentioned. James also described the curriculum map as a scope and sequence tool. He explained,

> The district has kind of created their scope and sequence. At the beginning of the year I look at that and I say OK I need to be hitting these on a weekly basis. I'm not going to focus on something for a month and something else for a month. I really want them to see this the whole year so they're not just having a focus for one month and then they're gone. And so I look at the whole year in context and I need to say OK then every week, how can I hit all of these concepts? And I really try to build the whole year in, so that every week you're seeing them.

A list of intended learning outcomes (ILO) was posted and referred to by James. He explained,

> I took a science course from one of the UEN (Utah Education Network) free science courses that you can sign up for. And it talked about ILOs and working your ILOs into the main concepts while teaching science. So those are the 8 ILOs for science that they're trying, the state, through this program, is trying to recommend that we really start focusing on when we are teaching science.

Barbara regularly referenced a spiral bound book that contained all of the Utah state core curriculum standards. She said, "When I look at the standard that I need to teach I always look before and after, like the standard in second grade and fourth grade to kind of see where they are coming from." Regarding the selection of standards to focus on, Elizabeth commented, "I've got my core just right here, and like as I reviewed and as a PLC [professional learning community], we always make sure." In addition to the core curriculum, Elizabeth also stated, "I follow the curriculum map as my guide." The curriculum map referenced here was the math curriculum map created by the district that provided a day by day suggestion for what standards to teach and how they corresponded to the math program adopted by the district.

In summary, the findings of this study differ from some previous research regarding the importance teachers place on the curriculum goals and learning objectives while planning. Previous research has found that learning objectives are seldom the starting point for planning and few teachers even consider the learning objective while planning (Brown, 1988; Clark & Yinger, 1979; Kyung Ko, 2012; Peterson et al., 1978; Zahoric, 1975). The expert rural elementary school teachers cultivated a deep understanding of their grade level standards. The standards were referenced regularly throughout the planning process and evidence is plentiful that the teachers viewed the curriculum goals and lesson objectives as a driving force behind their planning decisions.

Not Following a Curricular Program with Fidelity

A curricular program is a product purchased by a school or district that intends to provide a prepackaged all-in-one solution to classroom instruction including a scope and sequence, curriculum goals, learning objectives, instructional strategies, activities, materials, and assessments. Teachers are often provided with a curricular program when they are hired. The school or district provides the program so that teachers have easy access to teaching materials and lesson plans without having to create it all on their own. The program materials publishing industry is very big business (Carmody, 2012). Schools and districts invest hundreds of thousands and even millions of dollars toward common curricular programs. Often the programs are purchased with required professional development for teachers. The publishing company usually sends out a representative who communicates the message to the teachers that their product is

superior and that the teachers will see amazing results if they follow the program with fidelity. Schools and districts also often insist on fidelity due to the dollar investment and the concern that these dollars will be wasted if teachers did not make full use of the programs.

The school district comprising the setting of this study provided several curricular programs. All of the teachers in this study were in possession of the Envision Math, Every Day Counts math, and the Horizons phonics programs. These are district-wide programs. The Envision Math and Every Day Counts programs were mentioned most often in the data. Every Day Counts was adopted long ago. The year this study was conducted was the third year of implementation for the Envision Math program. The initial implementation of Envision Math by the school district required teachers to teach the program with fidelity, meaning that teachers were to start at the beginning and do as the program indicated. Three years later, it was clear that the teachers in this study had initially attempted to show fidelity to their implementation of the program, but now only used the program as one of many tools at their disposal. It is worth noting that some of the teachers seemed a little embarrassed when they discussed their lack of fidelity, almost as if they were letting me in on a secret that they did not want everyone to know.

The teachers in this study rejected the idea of the need for fidelity to a program. Their success in realizing high rates of learning growth for students attested to the effectiveness of their practices, yet, none of them followed any of the provided programs with fidelity. Instead, the teachers exhibited a philosophy that viewed the programs as only one of many possible tools one could use to reach learning goals. The teachers

pointedly avoided parts of the programs and thoughtfully replaced and supplemented the programs with other materials. The ability of the teachers to alter the programs seems possible due to their experience with the programs as the data suggests that the teachers initially tried to implement the programs with fidelity but due to discovered flaws, the implementation level changed.

Philosophy of Program Use

The general philosophy regarding use of the programs amongst the teachers was very similar. Linda described her philosophy this way, “This, in my opinion, it’s not a bible, it’s a book, a tool. And if it’s a tool that helps, I’ll use it. If it’s a tool that doesn’t work, I’m going to find something that works.” She went on to say,

> I teach the program, but do I improvise? I think everybody that is a good teacher is going to have to. Do I teach it letter perfect? No. Because my goal is not to teach a program, my goal is to teach these kids…. I look at the lesson very carefully and I project, how could I make it more successful for the student?

When asked why she does not follow the math program as it is written, Barbara explained,

> I like the kids to not be bored. They all will be bored and they’ll say, oh, we’re on 18-5. But if it’s hands-on, I like to do a lot of hands on things, or partner work and then everyone’s engaged more so and I feel like it sticks better.

I attempted to summarize one of Elizabeth’s answers by stating, “It seems that you are just trying to think about, now how can I teach them this concept, not relying on what the program says to do?” Elizabeth replied, “Exactly, and that’s what I do for every math lesson. But if this is good (indicating to the program manual) and I’m like, hey, they will get it, then I would use it.” This philosophy extended beyond the math program to

other programs as well. Elizabeth continued, “I do, do the calendar where some teachers won’t. But I tweak it so that it works for me and so I might not do it with fidelity, but I do what works for me.” James added to the point by saying, “I started out with Every Day Counts the way it was designed and then it expanded to meet the needs of my students. And it adjusts every year based on the needs.”

Avoid Parts of the Program

The teachers avoided parts of the programs on a lesson by lesson basis or even as a general rule. While planning, Linda repeatedly examined the student problems in the student section of the math program while ignoring the teacher helps. When asked why she did this, she responded,

> I like to look at the questions so that I’m aware of the ones that I just don’t think are going to help them. There are some questions that are so confusing that they are not worth the effort. And being familiar with what the items are so that I’m not caught off guard. I don’t want to waste their time with problems that are not going to reach that goal.

Regarding the online videos provided as part of the math program Linda said,

> I’ll show the films if I think they are valuable. Some of them I don’t show because they tend to confuse the kids. And they take a lot of time. And I wanted to invest that time in actually having them work and doing and learning. Some of them (program videos) approach it but don’t even touch what they are actually having them work on.

In regards to avoiding portions of the program, Barbara shared a similar view.

> Sometimes I’ll pick and choose questions because sometimes they’ll word questions so different and in the teacher part, sometimes it will only teach one way to do it and that’s like against what I teach the kids. I always tell them there’s more than one way to solve a problem.

Elizabeth recalled coming across a sticky note that she had placed in her program

manual for a certain math lesson.

> I ran across it this year when I was teaching and it said “don’t do dumb video” so I didn’t care for it. I didn’t preview it because I was probably on topic twelve or whatever and everything else was just fine but then when we got to that, we showed it and I was like, okay, and then I just kind of winged it and re-taught it on my own and I don’t even know what lesson that was, but it does have a note that says “don’t show the video.”

One teacher indicated that he did not even look at the math program at all on a day-to-day basis. James remarked,

> I used it as a guide to set up my topics but I did not feel…Pearson has a couple of big flaws in the program. They really don’t have a good review. And I find that students, if they don’t review, forget things very, very quickly. So the review had to become a very, very big part of our math program.

Supplementing and Replacing

Avoiding portions of the programs was not the only way the teachers made adjustments to the program while planning. Often supplementation or replacement activities and materials were needed to fill the gaps left by the avoidance of portions of the programs. Linda shared, “Do I use supplementary materials? You better believe I’m going to use supplemental materials.” She went on to give an example of a lesson from the program that required the students to draw several number lines and why she created a graphic organizer worksheet for the lesson instead of using what was provided by the program.

> You wouldn’t know how hard it was for these kids to number their number line. So to draw the line and draw the slashes would have been painful. So I find, I see…and I look at the paper and I say, how can I make it to help these kids, to make it easier for them to actually grasp the concept? And so, yes, all of those things I pretty much created myself.

Elizabeth described the process she goes through to determine the source material

for her lessons.

> I do a lot of just looking up things and I like to get on sites, or else, like, Google lesson ideas for, like, surface area. Or lesson ideas for volume and I just see…you know, why reinvent…or I'll look at and say, oh, I like that, and I'll take some things that I found and I'll just apply it, so I guess…and that helps me to learn…I don't know…I just…if I don't know what I'm teaching, then I would definitely look here (pointing to the program manual).

While planning for instruction Elizabeth came across a sticky note that said, "Sir Cumference and the Sword in the Cone." When asked about the significance of the note she answered,

> It's a picture book and it's introducing and it has all of those geometric shapes to get their…so I just add that…it's not in here for me to do but for me I just added a little something to tie literacy with the math concept.

The internet was a much referenced resource for the teachers. When Elizabeth wanted to find materials to supplement or replace what was provided in the program she often turned to the internet. She explained the reason she replaced the program with a worksheet.

> So maybe 8 out of 13 were just on the surface area but not all 13…I'm just…that's why I grabbed a work sheet, and I had these ran off, but then I Googled more and thought, I'm just going to see if there's a worksheet on those free worksheets dot com…more surface area and I ended up using that one.

Programs were viewed by these expert teachers as only one possible way to teach the concepts they planned to teach the students. Their instructional planning decisions consisted of the examination of the provided program and included the careful avoidance of certain aspects of the program as well as the supplementation or replacement of program pieces with other resources. The idea that a teacher should maintain fidelity to a program was universally rejected by the teachers participating in this study.

Documentation of Decisions

One may assume that as teachers become more expert and more successful, their ability to write lesson plans will also improve. Additionally, it may be assumed that comparing the lesson plans of expert and novice teachers would reveal that the expert writes a complete and comprehensive lesson plan with all of the essential components, while the novice lesson plan would be lacking in some way. The data from this study suggest that perhaps the opposite is true. The writing of detailed lesson plans was a practice completely absent from the planning of these expert teachers. The teachers documented instructional decisions in a very general way with several of them using a weekly planner. Additionally, some decisions were documented through the placement of sticky notes where the teacher would be reminded of certain things to do.

Absence of Detailed Lesson Plans

Although the teachers in this study did document some broad instructional decisions, when it came to documentation of teaching strategies, no documentation was observed. Details regarding how the lesson would be taught and how the teacher would interact with the students simply did not get recorded. In fact, it appeared that very little thought was directed in this area as teachers planned their lessons. Mary explained why she did not write detailed lesson plans.

> I've done that in the past. But I didn't always go back to it. And I feel like our time is really valuable, and if I kind of know where I'm going with what unit I'm doing or the concept that I want to teach...then I'm okay with that...it works for me. I can sit down and write it out word for word and list it out but that doesn't mean I'm going to come back to it.

Linda described detailed written lesson plans as scripted. She described why she didn't write scripted lesson plans, "I don't script it. I've heard that some principals like it scripted. That would drive me crazy. I have a general idea of where I want to go and what I want to do, but I leave it wide open." When asked why she doesn't document the details of her lesson planning, Linda replied,

> I'm never really sure if I'm going to get it all done so I don't want to take my time doing that. I'd much rather look at the lesson, look it over, get a good feel for where I'm heading and get it in my head.

The idea that teacher time is more wisely spent in other areas was a common theme in these data. Barbara explained why she doesn't write lesson plans, "I think I do in my head, is why."

Improvisation was a defining practice amongst the teachers. It was not surprising, therefore, that the teachers did not document or even plan the teaching strategies they intended to use. Linda explained why, "Because I've got it in my head. I just do. I know what I'm doing."

James described the reasons for his refusal to write detailed lesson plans this way.

> I found that when I put down lots of details and I would plan everything out, I would feel bad when I deviated from the plan. And I found that my classes never went the way I had planned. So therefore it was a lot easier in the long run for me not to do those plans because I would sit down at the end of the day and I would say, well I didn't get this and I didn't get this and I didn't get this and I would actually be hard on myself. Where I found that if I could just focus my time instead of on being a perfectionist and doing a checklist it was better just to help the kids learn. And spend my focus with learning rather than checking things off.

Barbara also expressed her reasons for her lack of written detailed lesson plans.

> What I've found is that every time I've done a detailed plan, usually the plan has way more than I'll finish in a day and so I feel like...and I know this is true for a lot of people, that kills them. If they didn't get done on day 1 everything that they

> were supposed to get done on day 1. Well I'm pretty laid back so I can just knock it to day 2 but that kills some people. Some people can't do that.

Lesson plan templates are commonly used by teachers and heavily promoted by the experts. However, Elizabeth said,

> I don't care for the template. In fact, I just saw while I was cleaning up some of my files, I had them for science because we were trying to do that as a team and we all during our PLC would…. I just would write it because that's what we were doing as a team, but then I would come back and I would reorganize it to what would work for me day-to-day to day.

Weekly Outline

Four of the teachers used some form of a weekly planner. Barbara and Elizabeth used a standard teacher plan book consisting of a row for each day of the week and various columns representing blocks of time. Mary typed her weekly plan in a Microsoft Excel spreadsheet with columns representing the days and the rows as the blocks of time. Linda used the same layout as Mary with the difference being that she created her weekly plan by using tables in a Microsoft Word document.

Figure 10 is an example of a portion of Linda's weekly plan. An examination of all four weekly outlines revealed interesting information regarding the types of information these teachers chose to record. Each item recorded in the weekly outlines by the teachers was assigned to a lesson category and the items were counted. Table 3 shows the number of items that were recorded on the weekly outline for each lesson category.

Analysis of the weekly outlines found 222 items recorded. Of those, a quarter of them recorded a specific activity that the students would participate in. References to specific lessons in program materials accounted for 20% of the total items recorded.

5/5-5/9	Monday	Tuesday	Wednesday	Thursday	Friday
7:30-8:00	Run, Pledge, Roll, and Preparation for the Day				
8:00 – 9:15 Math, EDC, Tiered Instruction	Math instruction **16-3 Percents, Fractions , and decimals-finish Page 400-401 1-27** **16-4 Finding percents of a whole number Page 402-403 1-31 ?24-26** **EDC# 1-5 money changers**	Math instruction 16-5 Problem solving: make a table and look for a pattern Page 404 1-15 **EDC# 6**	Math instruction **16 review Page 406-407 1-15** **Introduction to topic 15** **15-1 Solving Addition and Subtraction Equations Scales for balance (orange) p. 376-377 1-18** **EDC# 7**	Math instruction **15-2 Solving Multiplication and Division Equations Page 378-379 1-17, 18, 19, 21, 23, 24, 25** **EDC# 8**	Math instruction **15-3 Inequalities and the number lines Page 1-18** **EDC# 9-10**
9:15 – 9:45	Benchmark testing **9:15-9:45** Finish and submit • Language Arts • Math	Horizons Continue lesson 82 SS: Constitution outline	Horizons Compound Sentence **Conjunctions** School House Rock Lesson 47 ? Outline Lesson 6 SS: Constitution outline	Horizons Lesson 84 ? SS: Preamble Questions to do from the outline	**9:15-9:40** **Read to Self and contracts**
9:50- 10:35 Specialist and Interventions	**Specialist** Art POW Band	**Specialist** PE POW Band	**Specialist** Media POW Band	SCIENCE	9:45-10:10 Program Practice

Figure 10. A portion of Linda's weekly plan.

Table 3

Weekly Outline Contents

Lesson category	Definition	Examples	Mary	Linda	Barbara	Elizabeth	Total	Overall %
Activity	References to a specific activity that students will participate in.	Cornstarch Experiment, Write a Tall Tale, Make a Table and Look for Patterns	22	17	4	13	56	25.2
Program	References to a specific lesson contained in a pre-purchased instructional program.	Math 16-3 Page 400-403, Horizons Lesson 82, Every Day Counts # 6	10	20	4	11	45	20.3
Subject	Reference to a very broad subject such as Math, Art, PE, etc…	Science, Band, Music, Art, Computer, Library	12	7	9	12	40	18.0
Standard/objective	References to what is being taught.	Ocean Floor, Preamble, Tall Tales, Solve Addition Equations	7	17	3	6	33	14.9
Assessment	References to any kind of assessment, informal, formal, summative, formative, etc…	Benchmark Testing, Science Test, Test-Out Quiz, SAGE, NWEA	7	14	0	6	27	12.2
Materials	References to items that will be used during instruction.	Scales for balance, Poster of Ocean Floor, BrainPop	0	4	0	7	11	5.0
Teaching strategy	References to how the teacher will interact with the students.	Read to self, Read aloud, Partner read,	0	3	3	4	10	4.5

Almost as many references were made to the broad subject areas with no indication of any other lesson category. Sometimes this was because the students were being sent to a different teacher for that subject. For example, the teacher simply wrote “art” and no other information because the students were going to be taught by the art specialist. No further documentation was necessary. Approximately 15% of the recorded items dealt with the standard or objective of the lesson. These references were also quite broad and lacked detail. References to assessments comprised 12% of the items while references regarding materials and teaching strategies comprised only 5% and 4.5% of the total documented decisions, respectively.

When compared to the complexity of the teaching practices explored in this study, the weekly outline documentation appears to be insufficient. If one were to hand this plan to a new teacher and they were to try to teach students with only this as their guide, they would struggle mightily. However, the reality of instruction for the expert teachers in this study was far more complex and focused than their weekly plans would indicate.

Although the lessons observed were loaded with teaching strategies, only 10 items were found documenting them. All of these were referencing a type of reading strategy. This evidence serves to further substantiate the claim the expert teachers did not think about teaching strategies while planning, instead, they drew on strategies based on an undocumented pattern or based on student responses.

It is interesting to note that an examination of the weekly outlines independent from the rest of this study would lead to conclusions very similar to those found by Zahoric (1975). Zahoric’s study found that activities were the type of planning decision

most teachers made as 81% of the 194 teachers studied made decisions about activities, the highest percentage out of all the decisions. Decisions about objectives were found to be made by only 56% of the teachers. Were it not for the think aloud sessions, observations, and interviews, my findings from analysis of the weekly lesson outlines would have resulted in a similar breakdown.

When asked if the weekly plan consisted of all of her planning documentation, Mary replied,

> That's generally how we do it. Sometimes we write more on there and Robert (neighboring teacher) may take it a little further on his side as far as what he does in the math. I generally go...if I know what I'm teaching, I can pretty well run with it. I do a lot of research. I do change things up but it's not always a documented thing. Sometimes it's just an up here thing (pointing to her head).

The decisions documented on the weekly plans were simple words and phrases. A lesson number, a page number, or content topics were the simple notes recorded on the weekly plans. Linda shared the reason for the lack of detail on the weekly plan and why she leaves out details.

> I've done it so much that I don't need every detail. And it just gives me something and it's there. I don't have to look through this huge thing (referring to a traditional plan book), I would lose it, I wouldn't fill it in, you know.

She went on to show that doing her weekly plan on the computer made it easier.

> I can say, this is what I was planning on getting done, but this is not what I got done so I just shift everything over and it's so much faster, within an hour I can have all my plans ready to go, run my papers off and I have a feel for where I want to go next week. I can look at my plans in the morning, a quick glance, cause they are in a plastic sheet, I put them in a plastic sheet, I put them on my filing cabinet. I can find it, cause things get lost. And I can find them and I can quickly look to see where I want to be. So I've found that works really well for me. Not that that is the best way, but I find that it works really well. Because otherwise you end up with a lot of arrows that says that I'm going to do this tomorrow and so forth. This way I don't have to worry about it.

Barbara was observed writing “18-2” in her plan book. She explained that sometimes she writes it differently, “You just saw me write 18-2 but when it’s like a power standard I’ll write it like “four digit addition” because I know that’s something that I can go and find other resources for.” Although the information on the plan book was brief, it was helpful on several levels. First, it provided direction from day-to-day and time block to time block. But there were other purposes. Barbara explained, “I wrote “three little pigs” because I always, I do use my book the next year and I’ll kind of look and see what I was doing at that time the year before.”

Barbara and Elizabeth shared a very similar procedure for the documentation of what was actually accomplished versus what was planned. Barbara commented on the reason she had check marks on several areas of her plan book, “That was just, that was my rough draft, my plan, and I checked off what I actually did.” When asked what happens when something is not check marked she answered,

> It goes down to the next day, I’ll draw a line down. And I really start strong with that at the beginning of the school year, but from about half year on I feel like every day is pretty much the same.

Regarding the types of things normally documented on a weekly plan, Barbara said,

> I will jot things down so that I’ll remember. This day I want to talk about the content of, like, a living creature, and then this day I want to find all the verbs about that creature and the adjectives about that animal. And then this day I’m going to turn the adverbs and verbs into a poem. And so I kind of just look at the scope and sequence and I’ll jot that down but I don’t do like a detailed plan.

Sticky Notes

Three of the participants made use of sticky notes as a way to document planning decisions and ensure that they would not forget them. Mary commented, “Sometimes I

write it down on a post-it note and I'll stick it with my unit on occasion. Sometimes I just remember it."

These reminder notes are helpful in preparation for a lesson but also can be helpful when they turn up in the middle of instruction. Barbara explained,

> If something came up...cause I don't just plan exactly how it's going to go, but if something came up that I thought was a great point or...I'll make a note or I'll even write in my lesson, like in the actual book or I'll stick a sticky note to do this or to read this. Because sometimes I'll be teaching a lesson and I'll remember oh, I have this so I'll just go pull it out and do it right there.

The use of sticky notes is explained by Elizabeth.

> I do those just because...I guess they are notes for me so that I make sure that I'm getting that point. It's just something important, I don't know, and just like, I say "do first" just when I'm doing my lesson plans I'll remember, oh, that worked, so when I'm planning I might do that.

She later explained that sometimes she would write the notes before instruction but sometimes she would write them after instruction. One note said "brainpop" and she explained that this note was written before the lesson while planning so she would remember to go to that website. Another note said "don't do dumb video." She explained that this note was written after the lesson went poorly so she would remember for the next time she taught that lesson. The sticky notes are not just for remembering what to do. They can also be used for remembering resources.

> See that's another note I just write to myself so I have my box of solids up there and I just want to make sure that I pull those out because sometimes I forget what I actually have in my cupboards.

The evidence suggests that there is a connection between the improvisational nature of the expert teachers, the teaching strategy menu theme, and the lack of documentation. If instruction is most effective when it is reactive to student responses

and teaching strategies are to be used as needed from moment to moment, it follows that the writing of detailed lesson plans would be a great waste of time as the expert teacher would not follow the plans anyway preferring instead to adjust instruction to meet the needs of the students. Instead, expert teachers chose to document the lesson topic or brief mention of resources as a way of organizing days and weeks. This type of general planning takes very little time and allows for a great deal of flexibility.

Assessment

One of the common characteristics found in instructional planning models is the assessment to determine whether or not the students learned what was intended. It is of great importance to find out what actual learning occurred compared to the intended learning. The instructional planning decisions of the teachers in this study were heavily influenced by their assessment practices. Their day-to-day planning, as well as their moment-to-moment decision-making, often were dependent upon the results of their assessments. These expert teachers implemented informal assessments and formal assessments and both forms of assessment influenced their instructional decisions.

Informal Assessment

When teachers attempt to ascertain student learning levels using means other than standardized instruments, the procedure is known as informal assessment. Some examples of common informal assessments are observation, anecdotal record, running record (for reading), rating scales, portfolios, and interviews (Morrison, 2008). The participants in this study used a variety of methods of informal assessment.

When asked about her method for finding out if she reached her instructional goal with the students, Mary answered,

> I just kind of think you can tell if they're grasping the concept or if they are not. You know that deer in the headlights look then you know they don't have it. Sometimes I have them do the OK, don't have it, kind-a-sort-a, or no. (Hand Gestures) But they seem to be with me well enough that they seem to at least be able to get in and get started. I guess it would just be an informal assessment.

In response to the same question, Linda shared a similar view, "Sometimes it's just a feeling that they're getting the answers, I go around and I see the right answers all the time. It's…consistently they're doing it."

James also indicated that he implements informal assessments. Describing his first few days with students, he said,

> You're also going to want to know where your kids are that aren't quite there yet, and so again those first days of talking to the kids is so important. But a lot of that is that instant formative assessment if you want to call it that. But you have to know where your kids are.

Teachers will sometimes perform assessment on an individual basis. Linda was observed targeting certain students with questions. When asked about this she replied, "If he's got it right and he can tell me why, I've won. And I know. It's quick assessment. I've assessed him right there. I know that he's got it and I know why he's got it."

Informal assessment can be accomplished any time and as needed. Barbara explained some simple ways she implements informal assessment.

> I'll give them all 5 problems and I'll just walk around and give them a check mark if they got it right. Just a little assessment. If it's writing, a writing piece. If it's math, maybe a couple of questions for all the kids. Sometimes I'll do what I call a pop quiz and I'll just give them 3 to 5 problems and then have them all turn in.

Informal assessment, for Elizabeth, seemed engrained in her teaching style. She

explained how she knew the students were learning, “They were just with me. Based on that and then coming from what I was getting from them they actually were getting it.” She went on to say, “I walk around and either they’re getting it or they’re not getting it and I can tell right away who needs help.”

The most common form of informal assessment found in this study was simple observation of students while they were working and as they answered questions. The teachers constantly circulated throughout the classroom and watched students for signs of confusion and comprehension.

Standardized or Formal Assessment

The characteristics of standardized or formal assessment are that all students answer the same questions and the items are scored in a consistent manner. These assessments can be used to compare the performance of individual students and groups of students (Glossary of Education Reform, n.d.). Examples of standardized assessments being used by the participants for planning purposes was far less frequent.

Few examples of using standardized tests for the purposes of planning daily instruction could be found in the data. While planning for instruction, Mary referenced one standardized assessment.

> Our language arts benchmark, I use that as a guide too, and so I’ll look at that and say, okay, we are really not getting main idea. So I really did a focus on main idea. I did a main lesson and then we did an interactive write. So I did a lot based on that benchmark. But I do that a lot. I base it off the benchmark because I really want them to be successful on that.

The benchmark assessment is a district-wide common assessment. All students in grades K-5 are administered the benchmark assessment at least three times each year. The

questions on the benchmark assessment are all tied directly to the standards that have been identified for each grade level as being most critical, or also known as power standards.

Although the participants did not seem to possess negative attitudes toward standardized assessment, this type of assessment simply did not appear to be as useful in planning day-to-day instruction as informal assessment practices. Perhaps on a larger scale standardized assessments would prove to influence the scope and sequence of the curriculum as well as the amount of time dedicated to certain concepts. Further study would be necessary to determine the influence of standardized assessment results on planning at the macro levels.

How Assessment Influenced Planning

Many examples of participants using the results of informal assessment to inform their planning decisions could be found in the data. Teachers expressed the influence assessment had on moment to moment decisions or disciplined improvisation. Linda commented, “If they’re catching on then I can go do other things. If they’re not, then I pull back, I simplify it and it may take us two days to do a lesson that I had planned for one.” In addition to extending the time spent on certain concepts, the results of informal assessment also prompted changes to the materials used to teach. Linda continued, “Lots of times it would be...we did that and they didn’t get it so that night I would create the worksheet.” Her overall philosophy of teaching reflects the essential nature of informal assessment for planning purposes, “The majority of my teaching is assessing and teaching, assessing and teaching, assessing and teaching. Because if they get it, I move

right on. If they don't get it, I'm going to pull back and slow down and do more."

The back wall of the classroom is dedicated to the concepts James will go over with his students on a daily and weekly basis. He commented,

> I took my worst subject and I put it up on the wall. And now any time that I see something struggling, those will still slightly fluctuate, if there's a concept the kids just aren't getting, it goes up on the wall so that it's there for the rest of the year.

James went on to explain his thought process at the end of the school day as it relates to the results of informal assessment.

> I finish the day and say, Oh the kids are still not grasping 2 digit multiplication, I will sit down and say, what can I do to help them grasp it better? And it usually goes into what kind of activity can I do to help them grasp it and really understand?

One method of informal assessment used by Barbara is to have the students self-report their learning level by holding up 4 fingers (I could teach this to others), 3 fingers (I get it), 2 fingers (I'm not sure), and 1 finger (I'm lost). The results of this informal assessment were used to prompt Barbara to adjust instruction.

> If I saw a kid with a 1 or a 2 or a kid say "I don't get it" then I'll not use a pick-me-up (random student selector app on the iPad) and I'll say "what do I do here?" and if they walk me through it then I know that they are getting it.

Three participants explained, almost identically, that the results of informal assessments impacted decisions about the use of their prep time. Barbara put it this way,

> The kids that I see are not getting it, that's when I devote my prep time from specials and I'll just hold them back for a minute and I'll work with them. Or on a ...if it's like a regular assessment, I'll always have them stay in and make corrections. So that they see what they missed and I make them fix it.

The examination of standardized assessment results caused a large scale change to one of the major instructional routines for Barbara. She explained,

> At the beginning of the school year I just did every day counts. And we took the first benchmark and my kids blew it. And so I just thought, if I change everything on that calendar to match every one of the power standards, then they would be hitting it every single day. So I took everything down, and everything up there is home-made. I made it all myself. And it's simple.

This was not a day-to-day or moment-to-moment adjustment, but rather a large scale or macro change, which altered the instruction from that day forward every day. Barbara did not need to reflect on those assessment results again, nor did she have to ponder how to address the needs discovered from said results on a daily basis.

Both informal and standardized assessments had an impact on participant instructional planning. However, the results of informal assessment provided the information participants used for the vast majority of their day-to-day and moment-to-moment instructional planning changes or disciplined improvisation. These findings suggest that informal assessment is a critical aspect of expert rural teacher planning. Some evidence suggested that results of standardized assessments only impacted planning on a larger scale, prompting more permanent and long lasting changes to schedules, scope and sequences, and curriculum maps. But further investigation into the impact of standardized assessments on these macro levels of planning is needed as the evidence in this study consists of only a few examples.

Teaching Strategies

A major theme that emerged from the data centered on the many different types of teaching strategies that these expert teachers implemented in their instruction, their acquisition and maintenance of these strategies, and how these strategies were evidenced

and used during instruction. Merriam-Webster's online dictionary defined a strategy as a careful plan or method for achieving a particular goal. For the purposes of this study, I defined teaching strategies as those methods teachers use while interacting with students to help them achieve the learning objective. Teaching strategies determine the way teachers interact with students, the way students interact with the teacher, the way students interact with other students, and the way students interact with their learning environment. Although a teaching strategy may be described as something on a more macro level, like direct instruction, I focus here on the micro level of strategies to describe the specific methods teachers use to facilitate interaction with and between students. One may look at these strategies as the smaller interactions that make up the more general instructional practices, such as direct instruction. Direct instruction is an instructional approach that calls for structured and sequenced lessons that are led by teachers (Glossary of Education Reform, n.d.). A teacher may implement a direct instruction approach to teaching social studies but this description fails to adequately describe the instruction. It is only when examining the way teachers choose to facilitate the interaction with students, between students, and within the educational environment that we are able to adequately describe the instruction. Teaching strategies are the ways teachers facilitate the interaction with students, between students, and within the learning environment. Two different teachers may employ the direct instruction approach, but choose to facilitate the interactions with students, between students, and within the environment in dramatically different ways. Therefore, an examination of the teaching strategies implemented by expert rural elementary school teachers compared to the

planning practices performed by the same teachers was an important step in understanding the overall planning process.

The analysis of data resulted in the identification of 52 different teaching strategies. Table 4 lists the strategy names, purposes, definitions, and examples.

Some teaching strategies were used more often than others. Of the 52 strategies, the 10 teaching strategies implemented most during instruction observations were open questions, individual questions, teacher modeling, correct answer feedback, student as teacher, teacher clarification, elaborate or explain, circulation, all student written responses, and random student selector. Table 5 shows the full list of strategies along with the number of occurrences observed during instruction.

Although it is interesting to examine the strategies on an individual basis, it is the analysis of the strategy purpose that provided a clearer picture of teaching strategies implemented by expert teachers. In order to assign a teaching strategy purpose to the 52 teaching strategies identified, each strategy was examined in light of the mixed model of instructional planning depicted earlier in Figure 1. I compared each individual strategy to the components of Figure 1 and determined which component of the model aligned best with the purpose for the strategies. For the strategies that did not fit any component of the mixed model of instructional planning, I determined the most logical purpose for implementing the strategy. The strategy purposes were assessment, explain/model, feedback, engagement, support practice, independent practice, materials, higher order thinking, manage chaos, intervention, and motivation.

Table 4

Teaching Strategies

Strategy name	Strategy purpose	Strategy definition	Strategy example
All student written response	Independent practice	Every student responds to the question in writing.	All students have a white board and they write the answer to the question there, then show the teacher.
Attention getting	Engagement	The teacher enacts a well-practiced way of gaining the attention of the students.	Teacher counts backwards. Students are to be ready by the time the teacher gets to 1.
Automatic activity	Independent practice	Students automatically do a learning procedure or routine.	Science board. Student names are written above science tasks. The students automatically go up to the board and do it as part of a routine without being asked.
Cheerleading	Motivation	The teacher encourages students to keep trying. The focus is on effort.	During independent practice the teacher says, "Keep it up, keep trying, you're working hard."
Choral reading	Supported practice	All students and the teacher read text out loud at the same time.	All students and the teacher read text out loud at the same time.
Circulation	Assessment	The teacher moves around the room looking at student work or listening to conversations.	During independent reading the teacher listens to individuals as they read the text.
Correct answer feedback	Feedback	The teacher informs the students that they did something the right way.	After a student answers a verbal question from the teacher, the teacher says, "Excellent.”
Correct behavior feedback	Feedback	The teacher informs the students that they behaved the right way.	The teachers says, "I love the eyes up front, thank you."
Corrective feedback	Feedback	The teacher lets the student know that the answer they provided is not correct.	Teacher asks for an inference, but a student provides a prediction. The teacher explains that the answer is not an inference but is a prediction instead.
Early finishers	Engagement	The teacher communicates what the students are to do if they finish their assignment early.	The teacher says, "If you finish Monday on your daily language, move on to Tuesday."
Elaborate or explain	Higher order thinking	After a student responds, the teacher asks the student to elaborate or explain their answer.	A student does a math problem at the board and the teacher asks why they did what they did, requiring an explanation.
Independent language arts	Independent practice	Students work independently on their language arts work. Grammar, Writing, Etc…	Students do a daily language worksheet while the teacher conferences with students.

(*table continues*)

Strategy name	Strategy purpose	Strategy definition	Strategy example
Independent math	Independent practice	The students work on a problem or a set of problems independently.	The teacher has students do the daily spiral review for the math lesson before instruction begins.
Independent reading	Independent practice	Students read silently to themselves.	Students read silently to themselves.
Individual attention	Engagement	The teacher does something to get the attention of an individual student who is not paying attention.	The teacher calls out a student's name during instruction and reminds him to stay focused.
Individual question	Assessment	The teacher asks a question that one student responds to.	While explaining about an artifact at the front of the room, the teacher interrupts the student and asks, "Why do I have it labeled as a fossil?"
Individual remediation	Intervention	The teacher notices that the student is struggling and provides one on one instruction.	When showing their answer to a question on their white board, students get the wrong answer, then the teacher spends time with each student that got it wrong, one on one, to help them understand how to answer the question correctly.
Interruption	Manage chaos	The teacher is interrupted by outside sources.	A student from another class comes and tells the teacher that their UTIPS tests are not working and he has to fix the system for them.
Lucky last comment	Manage chaos	One student gets to make the last comment about the topic at hand.	One student gets to make the last comment about the topic at hand.
Materials needed	Materials	The teacher tells the students the materials they will need for the lesson.	The teacher says, "You are going to need iPads."
Non-committal feedback	Feedback	The teacher deliberately doesn't say whether the answer provided was right or wrong.	After a student answers the question of what it means when the text says that alarm bells went off in his head, the teacher just says, "interesting."
Open question	Assessment	The teacher asks a question without indicating who is to answer it. Open to any student to answer, or all students.	After time spent choral reading the teacher asks, "What's the definition of Entrepreneurship?"
Partner compare	Supported practice	Two students show each other their work and compare what they did.	When all students have found the surface area, they compare what they did. If they got different answers, they have to determine which is correct and why.
Partner question	Supported practice	The teacher asks partners or neighbors to discuss the answer to a question.	The book says that the character likes girls but doesn't talk to them. Can you infer what that means? Talk to your neighbor.
Partner reading	Supported practice	Students pair off and take turns reading to each other.	Students pair off and take turns reading to each other.

(*table continues*)

Strategy name	Strategy purpose	Strategy definition	Strategy example
Past learning	Explain/model	Use concepts learned earlier to help in understanding the new concept.	The teacher writes the formula for finding volume on the board as a reference when discussing what the formula for finding surface area might be.
Practiced choral response	Supported practice	Students say something together that has been practiced and all students know by heart.	The whole class says a chant about the rock cycle together chorally.
Random student selector	Engagement	A student is randomly chosen to be the next student to participate.	A student who just got done teaching the meteorologist section of the board picks a stick from a container of sticks with student names on them. That person will be the next one to do that section of the science board.
Reading conference	Assessment	The teacher visits with one student at a time. They discuss the books the student is reading and how much reading is getting accomplished.	The teacher visits with one student at a time. They discuss the books the student is reading and how much reading is getting accomplished.
Real life scenario	Explain/model	The teacher uses a real life situation as an example to show how the concept applies to real life and to demonstrate how to do something.	The teacher is teaching surface area, brings out a box with a new camera in it. She explains that she needs to wrap it and she needs to know how much wrapping paper to buy.
Reference	Explain/model	The teacher reminds students to use a particular resource that will help them with their work.	While solving word problems in math the teacher points to a problem solving chart on the wall with helpful tips on how to solve a word problem.
Re-read	Intervention	The teacher asks the student or students to read again something that they just read.	After a choral read, the teacher asks student to read it again.
Restate student comment	Explain/model	The teacher repeats what a student said in different words.	The teacher repeats what a student said in different words.
Self-assess	Assessment	The students express their own personal level of understanding.	The teacher asks students to hold up 4, 3, 2, or 1 fingers depending on their level of understanding. 4 is they know it very well and 1 means that they don't understand at all.
Show me you're ready	Engagement	The teacher asks the students to provide some type of signal indicating that they are ready to follow the next instruction.	Please turn to page 21. Point your finger in the air if you are ready to begin.

(*table continues*)

Strategy name	Strategy purpose	Strategy definition	Strategy example
Small group	Supported practice	The teacher pulls a small group of students together at a certain location in the room and works with them separately while the rest of the class is doing other things.	After whole group reading, the teacher asks students to partner read the next chapter, but calls for a small group to meet with him in the front of the room where they work on it together.
Small group question	Assessment	The teacher asks a small group of students to answer a question chorally while the whole group listens.	Teacher asks Table 1 to share their answer as a choral response.
Stagger-start	Independent practice	All students are expected to do the same activity, but they only start when the teacher tells them to individually. Thus, staggering the start time for each student so they are at different places.	When reading in a small group the teacher says that they are going to read the next page but the students can't start until he touches their book. He then touches one book, waits briefly then touches another book.
State objective	Explain/model	The teacher states the purpose of the activity; what students are to learn or practice.	At the beginning of a small group lesson, the teacher says, "Today we are learning how to sequence."
Student as teacher	Explain/model	The teacher turns instruction over to a student who explains concepts, demonstrates, calls on students with questions, etc…	Student at the science board explains what she did as the meteorologist for the day.
Student initiated comment	Manage chaos	The student offers a comment or observation for the sole purpose of expressing an idea or thought.	A student shares a connection he made between what is happening in the text and his own real life experiences.
Student initiated question	Manage chaos	A student asks a question to the teacher.	A student asks, "What is a stock?" (as in the stock market)
Student to student question	Supported practice	Students ask other students questions.	Students ask other students questions.
Student to teacher question	Supported practice	A student is allowed to ask a question to the teacher.	A student raises a hand and asks what it means when the text talks about the lawns getting bigger and the lawn mower getting smaller every day.
Supposed	Engagement	The teacher tells a fictional scenario. The characters are students in the class.	The teachers says, "Billy and Shannon were wanting to convert their letters into photo stories but they didn't know how…"
Teach from student work	Explain/model	The teacher uses actual student work as an example to explain or demonstrate for the whole class.	Teacher asks if she can use a student's math work as an example. She explains what the student did and what the whole class can learn from it.

(*table continues*)

Strategy name	Strategy purpose	Strategy definition	Strategy example
Teacher clarification	Explain/model	The teacher expounds on a concept and explains to students more clearly.	After a student answers the question of what a hippy is, the teacher goes on to explain more clearly to the students what a hippy is as used in the text. Using a variety of adjectives.
Teacher model	Explain/model	The teacher shows students how to do something. She models it for the students.	The teacher draws a 3 dimensional figure and proceeds to find the surface area while the students watch and she explains what she is doing.
Teacher read	Explain/model	The teacher reads the text while the students follow along in their books.	The teacher reads the text while the students follow along in their books.
Time limit	Engagement	The teacher tells the students how many minutes they have to complete the task.	The teacher says, "You have until 10 after the hour to complete the daily language."
Visual aide	Explain/model	The teacher shows the students something that they can look at. Something real or a picture of something.	When teaching surface area, the teacher starts by showing the students a camera box.
Whole class question	Assessment	The teacher asks a question with the expectation that all students will answer the question.	The teacher asks, "Who are the new characters?" and gives a signal indicating that all students should answer chorally.

Once each of the specific teaching strategies were identified and these strategies grouped into their purposes, I was able to identify the number of strategies and the number of times these teaching strategies occurred during instruction. Table 6 shows the strategy purposes and the number of times strategies were used for each purpose by teachers during this study. Additionally, the number of different strategies assigned to the strategy purposes are listed.

A meaningful overview of the strategy purposes can be derived from this information. For example, the expert teachers participating in this study assessed their students a total of 318 times while using only 7 specific individual strategies to do so. First, this indicates that informal assessment is a priority for the teachers participating in

Table 5

Frequency of Strategy Implementation

Teaching strategy	Number of occurrences
Open question	134
Individual question	122
Teacher model	70
Correct answer feedback	64
Student as teacher	53
Teacher clarification	53
Elaborate or explain	40
Circulation	29
All student written response	26
Random student selector	23
Corrective feedback	21
Self-assess	18
Student initiated question	17
Choral reading	16
Partner question	16
Visual aide	16
Attention getting	15
Individual remediation	15
Restate student comment	14
Individual attention	11
Non-committal feedback	11
Whole class question	8
Independent math	7
Interruption	7
State objective	7
Student to student question	7
Materials needed	5
Real life scenario	5
Reference	5
Re-read	5
Correct behavior feedback	4
Independent reading	4
Show me you're ready	4

(*table continues*)

Teaching strategy	Number of occurrences
Small group question	4
Student initiated comment	4
Lucky last comment	3
Practiced choral response	3
Reading conference	3
Teacher read	3
Cheerleading	2
Partner compare	2
Student to student questions	2
Student to teacher question	2
Supposed	2
Time limit	2
Automatic activity	1
Early finishers	1
Independent language arts	1
Partner reading	1
Past learning	1
Small group	1
Stagger-start	1
Teach from student work	1

Table 6

Strategy Purposes

Strategy purpose	Number of occurrences	Number of strategies
Assessment	318	7
Explain/model	228	11
Feedback	100	4
Engagement	58	7
Supported practice	50	8
Higher order thinking	40	1
Independent practice	40	6
Manage chaos	31	4
Intervention	20	2
Materials	5	1
Motivation	2	1

the study. Second, the same assessment strategies were implemented over and over again. Conversely, only one strategy was used as a way to motivate students and that was only used twice. These findings suggest that some types of strategies take on more importance or value to expert teachers than others. The overwhelming difference between the number of strategies used and the number of occurrences of each strategy purpose is an important finding. It can be correctly stated that individual strategies were often used on a repetitive basis.

Strategy Acquisition and Maintenance

The next topic that emerged related to the theme of teaching strategies was *how* these teaching strategies were acquired and maintained by these expert teachers. Teaching strategies are methods teachers use while interacting with students to help them achieve the learning objective. I wondered how teachers acquired and maintained these teaching strategies. When basketball players first start to play, they invest a lot of time and effort in acquiring and practicing certain skills. As they develop in skill, they begin to try more advanced moves. Those moves that the players seem to be able to execute well and that give them an advantage over their opponent are adopted and made a part of the repertoire of moves that can be executed any time the need arises. The player must become so fluent with a skill that they can perform it without thinking, and use it instinctively. Similarly, the expert teachers in the current study selected strategies to use over and over based on the effectiveness of the strategy. Teachers became fluent with their strategies so as to draw on any of them at any given moment. When asked about the "elaborate or explain" strategy, Linda said, "I found that I really liked that more and more

so I intentionally put it into my strategies." In other words, she tried the strategy, found that she liked it, and intentionally made it a regular part of her teaching repertoire.

For the teachers participating in this study, teaching strategies were not something they thought about or planned for intentionally. They were so well practiced and polished that the strategies they used were used at any time without any prior thought. Just as the basketball player does not have to think about the mechanics of executing the drop-step due to extensive practice, the expert teacher does not need to think about how they are going to informally assess students. The strategy has become instinctive and automatic. So instinctive that it was sometimes difficult for the teachers to express why or when they used certain strategies. When asked about why a specific teaching strategy was used, Linda said, "Because it works. It's how I do the dailies. It's how I established them years ago when I started doing the dailies." An answer of, "it's just how I do it," was a regular response from these teachers. The strategies are a part of who they are as a teacher and I found that very little, if any, time was spent thinking about what strategy they would be using while teaching a lesson during daily planning sessions.

Teaching strategies were acquired through experience as well as professional development. When asked how strategies were acquired, James explained, "They're all strategies that have been emphasized in the past as being strategies that work, that help students." Other teachers mentioned learning a strategy from a consultant or from their principal. Several teachers mentioned that collaboration efforts with other teachers helped them to acquire good strategies.

Once strategies were acquired and became a part of everyday teaching, the expert

teacher stuck with the strategy, using it in a variety of teaching settings and situations. However, the teachers also seemed to be on the lookout for new strategies to add to their repertoire. James stated, “Good strategies never go out of style. You just keep adding other good things in and slightly change them as needed.” James explained the process of teaching strategy acquisition.

> I started with doing a couple of strategies at a time and then once I had them I knew I had to keep doing those but then I would work something else in, and then I’d work something else in. And I would slowly try every month to work something else in and then just kind of rotate and keep them mixed.

This comment indicated an intentional development of more and more teaching strategies. Strategy acquisition was not simply accidental but was a conscious activity that these expert teachers engaged in.

Teaching Strategy Menu

Another area of interest related to teaching strategies was the menu of strategies that these teachers created and used. The methods teachers use while interacting with students to help them achieve the learning objective, or teaching strategies observed in the course of this study were fluently implemented by the teachers and appeared to be selected by the teacher based on student needs that changed from moment to moment.

For the teachers in this study, teaching strategies were not something that they wrote in a lesson plan. It was very rare that teaching strategies were specifically identified by these teachers while planning, but rather, teachers had a list of previously determined strategies or a menu of strategies that they pulled from in the midst of teaching. In a restaurant one scans the menu for an item that fits the occasion. If it is

morning and one feels very hungry, the full breakfast with pancakes, hash browns, eggs, and sausage may be the proper selection. If it is noon and one is health conscious, perhaps a chicken salad would be the better choice. Similarly, when these expert teachers began instruction, they selected the appropriate teaching strategy from the menu of strategies available to them. Linda made the point this way, “It comes with experience, and you find your bag of tricks that work for you and you stick with it.”

These expert teachers have learned that certain strategies are best employed during certain circumstances. For example, Mary described why, in mid-lesson, she decided to start asking students to come to the smart board and demonstrate how they would do certain things.

> I thought, well, maybe they need that interaction. Maybe they need to actually touch it and do it and see it done in order to remember how to do it. And then also I had Ralph. And I needed him to be engaged in some way, shape, or form. Because where we were kind of off his schedule, he was thrown off. So that was part of the reason I chose to do that and I could see that once I had one student do it, then they got excited and they all wanted to do it because they like to interact with the smart board.

In this instance, the teaching strategy was for the teacher to model at the board how to perform certain functions with the software. When things were not going quite as she wanted, Mary selected a different strategy from her menu of strategies and began asking students to come to the board.

Linda articulated the matching of teaching strategy to situation by stating, “They kind of come just as whatever feels like needs to happen at that moment. There’s really no guideline as to how that happens.” The teaching strategies were referred to as “feeling” right for the moment or the circumstance. This indicated a comfort level with

the teaching strategies that allowed the teachers to move from one strategy to another as needed without planning to do so ahead of time.

Teachers, even the effective ones, sometimes realize that the strategy they are using is not working. In these circumstances, the experts turned to their menu of teaching strategies for help. For the expert teachers in this study, the teaching strategies identified from their collective menus comprised the 52 strategies identified in this study and can be found in Table 4. Elizabeth explained, “OK, this isn’t working and then I will pull something out. I’ll get paper. I’ll cut it. I’ll do something if I see that they are just not getting it I just kind of adjust as we are going.” This adjustment was made by simply selecting a different teaching strategy that was a better fit for the circumstance.

One strategy in Mary’s teaching strategy menu was called “supposeds.” This strategy involved describing particular students as being involved in a fictitious scenario, supposing that these students were doing some activity related to the task for the day. Regarding the selection and implementation of this teaching strategy, Mary explained,

> I do the supposeds, that’s what I call them, to make them more personal and also to...normally when I do that, there’s a couple of kids that I might be losing and as soon as I say their name, it brings them back to me. Even if it’s just for two minutes, so that’s why I do that. I do it a lot. But it’s not to call them out. It’s just to bring them back with subtlety.

This teacher did not start the lesson thinking that she wanted to use this strategy. Instead, when she recognized that a student or two were not engaged with her, this was one of the strategies among the many contained in her menu of strategies that she used to address that issue.

These expert teachers employed a variety of strategies for soliciting student

responses. It was not effective to have only one of these strategies on the menu prepared for each lesson. Linda was asked why she switched from whole class choral responses, to accepting call-outs, to calling on individual students by name. She described,

> I don't want to do the same strategy every time, so sometimes it will be this side of the room, sometimes it will be the backside. Sometimes it will be everybody, and sometimes it will be just the boys. So I do it to reinforce, I do it to teach, because if he's got it right and he can tell me why, I've won. And I know. It's quick assessment. I've assessed him right there. I know that he's got it and I know why he's got it.

The expert teachers not only knew when and how to use teaching strategies, but they were confident in their decision to abandon their strategy for a different one from one moment to the next. Barbara implemented a random student selector strategy utilizing an iPad app called "Pick-Me-Up." This tool was used most of the lesson. Barbara explained why she went away from that strategy at one point in her lesson.

> I did call on, like if I saw a kid with a 1 or a 2 or a kid say "I don't get it" then I'll not use a pick-me-up and I'll say "what do I do here?" and if they walk me through it then I know that they are getting it.

She stopped using the random student generator and called on the students who had indicated a 1 or a 2, meaning that they did not quite understand. This strategy was just one of many that were on the teacher's menu and that may be selected for use at any moment during instruction.

The teaching strategy menu allowed teachers to start with a strategy and then move to a different strategy quickly when the need arose. Elizabeth described how she started out with one favorite strategy and then was able to adjust from there when needed.

> I like to have partner check. If you don't agree, let's talk about it. Who agrees with Phil? Usually if there's somebody, then we'll stop and let's go through this one, if there's a couple of them, let's see why you got your answer and we'll just

> check that one. But if everyone's agreeing, and we're all getting it and so we'll just move on.

The expert teachers in this study were fluent in a variety of different teaching strategies. These strategies were not mentioned or thought about during planning sessions. Instead, they were so well practiced and consistently used that the teachers were able to draw on any of them at any moment.

Patterns of Instruction

The third area of interest related to theme of teaching strategies had to do with the patterns of instruction that were established by these expert teachers. Each teacher exhibited patterns in their instruction. These patterns of instruction incorporated both the wide variety of teaching strategies and the idea of selecting strategies from a menu of teaching strategies. For example, the data regarding teaching strategies revealed that only a small number of specific strategies (52) were used in the 893 total teaching strategy occurrences observed. Many of these strategies were used repeatedly. For example, only 7 specific assessment strategies were used even though 318 instances of the use of assessment strategies were discovered. Of those 7 assessment strategies, open questions, and individual questions accounted for 256 of the 318 occurrences. Thus, an important finding that emerged from this study was the existence of instructional patterns regarding how these teaching strategies were incorporated and used by the teachers.

Table 7 lists strategy types in chronological order as they occurred. I also assigned each strategy purpose a letter and included them in a column in hopes that this will make it easier to identify and follow the pattern of instruction.

Table 7

Strategy Purposes in Order of Occurrence

Chronological order of strategy purposes during lesson	Pattern
Explain/model	A
Independent practice	B
Assessment	C
Assessment	C
Explain/model	A
Manage chaos	D
Explain/model	A
Assessment	C
Explain/model	A
Assessment	C
Explain/model	A
Assessment	C
Explain/model	A
Assessment	C
Explain/model	A
Assessment	C
Independent practice	B
Explain/model	A
Assessment	C
Explain/model	A
Assessment	C
Explain/model	A
Assessment	C
Explain/model	A
Explain/model	A
Assessment	C
Explain/model	A
Assessment	C
Explain/model	A
Assessment	C
Assessment	C
Explain/model	A
Assessment	C
Assessment	C
Feedback	E
Explain/model	A
Assessment	C

(*table continues*)

Chronological order of strategy purposes during lesson	Pattern
Higher order thinking	F
Explain/model	A
Explain/model	A
Assessment	C
Explain/model	A
Assessment	C
Explain/model	A
Assessment	C
Engagement	F
Explain/model	A
Higher order thinking	G
Assessment	C
Assessment	C
Assessment	C
Explain/model	A
Higher order thinking	G
Assessment	C
Assessment	C
Assessment	C
Supported practice	H
Explain/model	A
Explain/model	A
Assessment	C
Feedback	E
Feedback	E
Explain/model	A
Explain/model	A
Intervention	I
Explain/model	A
Assessment	C
Assessment	C
Explain/model	A
Assessment	C
Assessment	C
Explain/model	A
Assessment	C
Assessment	C
Feedback	E
Assessment	C

This table identifies a simple pattern of explain/model followed by assessment with feedback and higher-order thinking intermingled in the pattern. Only five different assessment strategies and nine explain/model strategies were used by this teacher. The pattern, although not perfectly symmetrical, is nevertheless undeniable.

The expert teachers in this study not only used a wide variety of strategies and maintained a menu of teaching strategies, but they also put together a group of various strategies together to form a pattern of instruction that was implemented every time a certain subject was taught or as part of the daily routine. These routines or patterns of instruction were established early in the school year, taught to the students, and were quickly discarded when the unexpected occurred. The establishment of patterns of instruction freed up precious planning time that would have been devoted to deciding on the teaching strategies to be used. The teachers did not have to think about individual strategies because they already had a group of strategies or a pattern of instruction that were already an established part of the school day. When asked about the patterns of instruction that were observed in her instruction, Barbara described it this way, “I think it’s every single day. That’s how I teach every single day, most every subject.” Similarly, James explained, “It’s just kind of a routine or a pattern that I have felt most comfortable with.”

The existence of patterns of instruction was universal for all five teachers. When asked about the pattern, Mary stated,

> I guess that’s generally the process that I go through. I try to kind of explain it to them and I try to show them, and we talk about it. Sometimes I have them show me. I think I’d do a little more interactive here and there also, that first one wasn’t as interactive as the other one, but I’d probably go through that process and have a

few things in and out on occasion.

Linda described her pattern of instruction this way, “Once you find something that you’re pretty good at, you find something else that will help and you just keep working with it and just keep rotating through.” She went on to explain the virtues of sticking with a routine or pattern of instruction, “Consistency, over and over again. I think that’s what’s really important is consistency. Especially with these particular students (referring to the Native American population) you are consistent on how you do stuff. And eventually they catch on and they’re with you.”

Barbara explained the existence of a routine or pattern of instruction this way.

> I think it’s just experience. Just experience. I don’t know. I probably haven’t always done everything like that. The kids will...like yesterday in that lesson they reminded me...will you do the 4,3,2,1? Because they want to show, like especially if they’re getting it, they all want to show the 4. It’s just routines I guess, doing it every single day.

One pattern of instruction that came up frequently while observing the lessons of all teachers was targeting individual students to answer a question followed immediately by a request for the student to explain why they believe that is the answer. The teachers gave no clue to the student about whether or not the answer was actually correct, instead they simply asked for an explanation. When asked about this pattern, Linda said,

> I intentionally do it, but because I intentionally do it so much, it’s become a habit. It’s because lots of kids will give me a guess. So they learn that you can’t guess in my classroom. I want to know why. Because even if it’s the wrong way to do it, we’re going to learn.

Barbara described the same pattern of instruction this way.

> I think I started asking “why” a lot when I got trained in higher level thinking questions because then they have to explain their reasoning. So that’s just habit. That was experience and then it’s become habit. I just always do that.

The words “always” and “habit” were common throughout the data as the teachers described their routines or patterns of instruction. Similarly, Elizabeth described the same pattern of instruction.

> I just always follow up with “why.” How did you get that? How did you know? What is your thinking or talk out loud to us and explain because Susan maybe doesn’t even know or Phil, why you are doing that, so when they come up I always have them explain, because I want to know what they’re thinking...plus... it lets me know but it might also click with one other person in here.

Several teachers expressed that their patterns of instruction became so engrained in the classroom that students adopted them as their own when they had the opportunity to lead the instruction in the classroom. Barbara said, “Some kids will get up there and they’ll take the whole teacher role and I won’t say one thing. They’ll say, OK, tell your neighbor what you think the pattern is going to be today.” To which I responded, “So they pick up on your pattern of instruction and follow it?” Barbara replied, “Yep, yep.”

There exist patterns of instruction for various aspects of lesson delivery. The teachers exhibited patterns of instruction for the initial instruction of concepts, the review of concepts, the assessment of learning, feedback to students, independent practice and so on. Mary described her pattern of instruction as it related to providing feedback to students on their learning.

> I think it’s more of a routine because I will go around and see what they’re doing. I have to keep track of where they are in the process. That’s why they do the sticky notes up there. They generally know that I’m going to come around and see what they’re doing.

Elizabeth described her pattern of initial instruction as, “I just kind of go in the order of, OK, let’s grab their attention, let’s learn the lesson, let’s do the guided together. Then…we will jump to the problem solving.” When asked for more specifics the

teaching strategy pattern became clearer.

> They raise their hand and I'm walking right here and they say, you didn't check me, and I just...check your neighbors...if you got it right...they know just to check their little four...and they just know that and then they're done and they come up to the board and we discuss that one problem… Next problem, everyone let's correct number 7, let's all do that, they get it, everyone's doing it, everyone's on task and the first person up I jog over and I start from there and then we discuss it as a class. So we're just making sure and if they didn't get it...and I'm like, if you didn't get it, watch what we're doing, do it on your paper with us and let's try the next one and see if you can do it this time.

When asked about the strategies she employed during her lesson, she went on to explain that she used the same strategies every day, "Unless it's free writing or, yeah, I'm going to assess that later but um, but no, when we are learning a new, something new, you've got to or else how do you know they are getting it?"

The idea that expert teachers maintained a menu of teaching strategies coupled with the evidence that they intentionally strung certain strategies together in a routine or pattern to be repeated daily was an important finding. The implication for teacher planning is the reduction of time spent designing instructional delivery methods. Instead, the teachers were free to think more deeply about other aspects of instruction. More planning time could be spent on selecting the appropriate materials, determining which parts of the program to use, avoid, or replace, and matching the learning objectives to the current levels of understanding exhibited by their students.

Disciplined Improvisation

Another theme that emerged from the data was *disciplined improvisation*. The chaos theory provided a theoretical framework for this study as classrooms can be

described as complex and unpredictable or chaotic. Chaos theory (Larsen-Freeman, 1997) described some environments as being particularly sensitive to initial conditions. The butterfly effect proposes that even a very small change in an initial condition can result in a large-scale change in the behavior of the complex system. Cvetek (2008) argued that chaos theory was an acceptable lens through which to view classroom life and suggested that small changes in behavior such as a certain remark from a student or the way a teacher introduces an activity can have major impacts on the course of the lesson.

Traditional lesson plans provide a clear and logical sequence of activities that the teacher will follow. Unfortunately, classroom life is neither clear nor logical at times. As a result, these plans can prove to be of little use. Instead, Cvetek (2008) proposed that teachers should see themselves as agents of chaos and accept the complexity and unpredictability in the classroom. Teachers must respond to problematic situations in novel and unpredictable ways.

The teachers in this study expected unpredictable situations and were less concerned with writing detailed lesson plans and more concerned with applying an appropriate reaction to student responses. Since the student responses could not be predicted, the teachers spent little time trying to imagine how the students would respond and instead they developed a menu of teaching strategies and patterns of instruction that could be applied or altered as a reaction depending on the type of student response.

In line with chaos theory, Sawyer (2004) suggested that teaching is metaphorically seen as being one of two kinds of performances; teachers are actors in a play who are given their lines and deliver them, and teachers as actors in improvisational

theater who interact and respond to people and situations which are unpredictable and require creativity and spontaneity. Although rooted in some type of structure, Sawyer advocates that planning must recognize and allow for *disciplined improvisation*. Similarly, Boyd (2012) suggested that teaching requires flexible lesson planning in which there is no script and teachers must continually make decisions and revisions to their plans.

The teachers in this study clearly matched Sawyer's (2004) description of using disciplined improvisation. Their plans were general and were focused on the curriculum goal and learning objective as well as the materials they would use. However, the details of how they would teach the lesson were simply nonexistent. Instead they functioned with the anticipation that they would react to the responses of the students throughout the lesson.

Mary and Barbara made very similar comments regarding their ability to act as agents of chaos. Mary said,

> You know what...I don't know if this is an OK thing to say or whatever but . . . some of my best lessons are off the fly. You know, if something has become exciting all of the sudden or I've seen an issue that I need to solve I can just do some quick research and sometimes I can run with that and it's exciting to me to be able to do that and change it up and I can do that.

Barbara described it this way.

> Sometimes the less planning I do the better the lesson goes. When you just feed off of what the kids are saying or asking and then I guess it's just the needs of the class and every year it's going to be different.

Part of planning a lesson involves envisioning how the lesson will play out. The teachers in this study have come to the realization that their best guesses as to how the

lesson will develop are rarely accurate. Elizabeth stated, “In my mind, I know how I want to plan the lessons, but then in reality every class is different.” Similarly, Linda expressed that her lessons rarely transpire as she imagined them, “I think they change a lot, you know, depending on what’s…I don’t know, I might envision it but that doesn’t mean I won’t change it midstream because something’s not working or they’re not excited.” When asked how often her lessons go as she planned them, Linda responded,

> Probably never. Because kids are kids. They’re very unpredictable. Many times they go just pretty well, but there is always something. There may be a question that is…like the constitution is a great example. They’ll ask questions that…and these kids are deep thinkers, they’re my top readers. And they’ll have deep questions that they want to answer. So that’s when I say, those answers, that’s the time for good discussion. It’s not vital that I get through the material, it’s vital that I answer the questions for their understanding. So I come up, and I know what I want to do, I know how to do it, and I feel the kids out. So I would say there’s probably only a handful of times that I’ve had a lesson go exactly the way I wanted it.

Elizabeth recognized the folly in thinking that one can anticipate what will happen in the classroom, “You should always have a plan B, I don’t know, if it just didn’t go, I . . . if they didn’t get it I’m going to maybe give them another...well then I would have gotten out the boxes.” Similarly, Linda adjusted her planning to compensate for the lack of accuracy in her predictions of how lessons would go.

> Having a whole bunch of things that I want to do for them and then I can do however much I think they are capable of doing that day, because Monday might be a horrible day, but Tuesday they might just go crazy and we can get a ton done. So I don’t necessarily plan that I’m going to do this, this, and this, I plan, these are the things I’d like to get done. Now let’s see how much we can get done according to how well they’re working that day.

All teachers demonstrated and expressed the need for teachers to be able to adjust their instruction from one moment to the next. Linda explained,

> Like with my math program I'd much rather glance at what I'm supposed to be doing and then do it and feel out for the kids if they're catching on then I can go do other things. If they're not, then I pull back, I simplify it and it may take us two days to do a lesson that I had planned for. Because you never do know exactly how they're going to do.

Sometimes the teacher will need to change what they are doing due to lack of student success. James explained, "As a teacher you should always be watching how your students are engaged. When you start to lose that engagement, it's time to try something different." Barbara put it this way, "If math is hard and I think, oh, we've spent a lot of time on this, we need a brain break, I'll just continue right there the next day. And that's when I know it needs an extra day." Linda said, "I teach the program, but do I improvise? I think everybody that is a good teacher is going to have to. Because if these kids give you the deer in the headlights look, you're going to have to improvise."

Elizabeth also recognized that there were times when students do not learn as quickly as expected and a teacher must be prepared for that. She explained,

> I wanted them to explore and come up with their own formula of how to find surface area of a rectangular prism and they did it on their own so I didn't have to say, you know what, sometimes when you do like a lesson, and I want them to . . . and they just can't get it, sometimes I do say, you know what, there is a formula, here it is and then we just do it over and over and now it's embedded in their brains so I'll, it just depends on how it's going.

She went on to describe her reaction to such a situation, "OK, this isn't working and then I will pull something out, I'll get paper, I'll cut it, I'll do something if I see that they are just not getting it I just kind of adjust as we are going." At other times, students will respond better and learn more quickly than expected. Elizabeth explained,

> So I had my pile of boxes there, but I didn't need to...they got it...they didn't need to see that there are six sides and I was going to have them measure each face, write the area of each face. Side, face 1, they could write on the box, whatever,

and then they could write the area and do that but they were kind of beyond that.

Linda shared her philosophy as it related to disciplined improvisation, “The majority of my teaching is assessing and teaching, assessing and teaching, assessing and teaching. Because if they get it, I move right on. If they don’t get it, I’m going to pull back and slow down and do more.” When I attempted to clarify an answer by asking if the students had responded differently than they did, and the lesson hadn’t been as successful, would Elizabeth have gone back to the original plan of using the boxes, and use the video she replied, “Definitely. Exactly, that’s what I do.”

For these expert teachers, teaching was not about developing tasks and checklists and checking them off. Linda revealed,

> I still had the goal that I wanted to get this much done but I did it in a way that it was going to help them. I wasn’t just doing it because it’s on my list and I’m going to get it...check, check, check. So I don’t do that.

Two teachers expressed the identical sentiment that their plans must not be rigid but rather they need to be quite the opposite. James expressed, “It’s a guideline, it is not set in stone.” Additionally, Elizabeth made a similar statement, “Nothing is set in stone because I, if I see that we don’t need to do something, then I don’t do it. So I’m just constantly monitoring I guess.”

Although I have made the case that chaos theory involves the mundane yet unpredictable events and circumstances found in classrooms, occasionally the truly unexpected or out of the ordinary occurs. Mary explained how she handles these situations.

> I just kind of roll with it. You know, you can’t get upset about them because it’s out of your control. Like a fire drill, we stop what we’re doing, go out and do the

> fire drill and come back and just get right back to it. Birthday treats, it's the end of the day, that's generally when that happens and, yea, you just have to roll with it.

Disciplined improvisation also occurs on a broader scale. Barbara explained that the students as a group behave differently from day-to-day, "Some days they're silent and perfect and some days we have to build stamina and practice all over again." On one occasion, a whole unit completely changed as the teacher reacted to how the students responded. Mary recalled,

> The unit prior to that we were reading a book called Pegasus. And it was on Greek Mythology. Well, I needed to teach Genres and it kind of went along with another genre and the kids were so into it that we took and built a unit with it and ran with it. And I just built it into literacy. I had never done a Greek mythology unit before.

Disciplined improvisation occurred constantly in the classrooms I studied. Linda put it well.

> If they would have really gotten what I was doing in Horizons I probably would have cut it down and moved to the Constitution. If they had been struggling or whatever, I would have said, OK, we'll put this away and we'll pick it up tomorrow. If they'd have gotten it just like that...I might have gone on to do more. I might have given them the worksheet that I created which I didn't give them that day because they weren't there. So you feel it out...that's why going by a plan doesn't necessarily work.

Disciplined improvisation is the act of adjusting instruction based on student responses while still focusing on a curriculum standard and/or learning objective. The teachers in this study demonstrated that disciplined improvisation was an important part of their instruction and influenced the way they plan for instruction. It requires reflection to change teaching strategies suddenly. It requires reflection to make changes based on student responses. The teachers in this study explained that they reflect on their teaching practices in different ways. This reflection takes place from one moment to the next, at

the end of the day, and from one school year to the next.

In-the-Moment Reflection

It has already been established that these expert teachers adjusted their instruction from one moment to the next based on the responses of the students. Much of the documentation for this can be found in the disciplined improvisation section. Here, I provide some specific examples of participants discussing the reflection that takes place in the moment.

I observed Mary teach the same lesson twice in a row. The second lesson was different from the first lesson. In the first lesson the approach was for the teacher to model what the students would be doing. However, the second group was characterized by the students doing most of the modeling. When asked if the differences were due to reflection she answered, “Kind of. It kind of was. I thought, well maybe they need that interaction. Maybe they need to actually touch it and do it and see it done in order to remember how to do it.”

In answer to a question about whether or not reflection is a regular practice for her and what types of things she reflects on, Mary replied,

> Yes, I do that every time I teach. I’ll say, well that went okay or I need to change that for next time. I definitely would think about.... I look at student response. If they’re engaged, I feel like that’s a pretty good lesson. If they’re not as engaged or kind of...wanting to get ahead of me, then I realize that maybe I’m going a little slow for some of them.

Sometimes reflection in the moment prompted a teacher to simply stop and regroup. Barbara explained this.

If the kids all seem like stressed out. And they’ll all be stressed out and then

> sometimes even I need a break like, OK, what's a different way that I can approach this? And sometimes it's frustrating when none of them are getting it and you're like, why aren't you guys getting this? So I think, OK, what am I doing that I could change, like, what's a different way?

Conversely, when a teacher stumbles upon something that really works well, the reflection may prompt immediate documentation as described by Barbara, "If something came up that I thought was a great point or…I'll make a note or I'll even write in my lesson, like in the actual book or I'll stick a sticky note to do this or to read this."

End-of-Day Reflection

There is evidence to suggest that the participants of this study made a practice of reflecting at the end of each day, prompting them to make changes to their plans for the following day. Linda described what prompts this type of reflection and the results of it.

> I would teach a lesson, let's say that I would have taught this lesson without that worksheet. I would have recognized the struggle they would have had just making the line, making the graphs, even if I gave them graph paper how much they struggled. And I'm going, I'm not teaching them how to make lines, and graphs. I want to teach them how to graph it. So how can I eliminate the middle man? So that night I would create the worksheet.

When asked what reflection, if any, occurred, Barbara answered,

> A lot, as I'm looking at what I'm going to do tomorrow. I will look at, say, reading and I'll say, OK, the kids did not get multisyllabic words. So tomorrow, I think, instead of doing this...we're going to pick up on that for like ten minutes. And we're going to do it every single day. And after we finish that week, then I'm going to give them the worksheet, instead of giving them the worksheet right now, because we're not ready. It would just be a fiasco. So I do…. I look at what we did and where we're going.

Barbara answered the same question this way.

> I would not do any formal reflection necessarily. At the end of the day I may ask myself, did everything go the way it was supposed to? And if I feel like something hasn't, I finish the day and say, Oh the kids are still not grasping 2

> digit multiplication, I will sit down and say, what can I do to help them grasp it better? And it usually goes into what kind of activity can I do to help them grasp it and really understand?

Elizabeth explained,

> Yea I do. Maybe that's probably when I maybe will do the post-it thing and then make a note to myself. So I guess I naturally do it and not knowing I do that but I do, do that, it just, I just do it I guess.

Year-to-Year Reflection

Sometimes the reflection that occurs does not impact the classroom immediately but leads to changes that are realized the following school year. James indicated that some of his science activities, although they were good activities, did not have the impact he had hoped. He explained,

> I actually developed these games to where we would do it once with the kids but we never came back to revisit it. We would do it once and we were done. And after revisiting this I saw the need to continually come back and relook at it because science is not a one time you teach it and then you're done. You're constantly going back. You're constantly investigating and thinking and asking questions.

He went on to provide another concrete example of this type of reflection, "I finished the school year and the students still didn't know area and perimeter. And the next year I was not going to let a single kid go without knowing area and perimeter."

The context of the reflection is sometimes on a scale that requires yearly reflection. Barbara had been using a district curriculum map all school year. The map was new and the teacher was new to the grade. She commented, "I see a lot of things I will do differently next year." While discussing the same curriculum map, Elizabeth echoed, "I'm going to tweak it. We could have extended some lessons."

Evidence that expert teachers reflected on their instruction regularly existed

throughout several of the themes already examined. It is clear that reflection takes place in the moment, daily, and yearly. Reflection is a critical part of the planning process for expert teachers as it initiates adjustments to instruction delivery thus improving student learning.

In summary, the teachers in this study demonstrated the essential nature of disciplined improvisation to the expert teacher. The ability to quickly change activities or strategies based on student response from one moment to the next was common among all five teachers. Their explanations and insights into this phenomenon indicated that disciplined improvisation was not simply a valued skill but it was a way of thinking. Disciplined improvisation also had a profound impact on teacher planning. Expert teachers recognized that specific and detailed written lesson plans were a waste of time due to the chaotic or unpredictable nature of the classroom environment. The effort to predict the response of the students toward certain activities or strategies was effort better spent in other areas.

Summary

The expert teachers participating in this study spent most of their planning time thinking about the “what” of teaching. They thought deeply about curricular goals and learning objectives. They referenced materials that contained information about the standards and expectations for their grade levels. They were careful to examine what they were going to be asking students to do and they made sure that the tasks matched their curriculum goals.

When it comes to the “how” of teaching, experts participating in this study spent very little time considering their method of instructional delivery on a day-to-day basis. Instead, they developed routines and patterns of instruction constructed from the teaching strategies they became fluent with over the years and that they had found to be effective.

Because the method of instructional delivery was not detailed and was based on well-practiced teaching strategies, expert teachers were able to adjust to the unpredictable nature of the classroom by selecting a method for interacting with students from their menu of teaching strategies that would be effective for any number of unpredictable situations. The characteristic of flexibility or the ability to adjust instruction from one moment to the next was one shared by all participants of this study. Figure 11 shows a graphic representation of the Expert Rural Elementary Teacher Planning Model based on the findings of this study.

The Expert Rural Elementary Teacher Planning Model consists of four phases; pre-planning, planning, instruction, and post-instruction. The pre-planning phase takes place over a long period of time. Teachers invest time and attention to developing a menu of teaching strategies that work for them. The teachers become fluent in their use of teaching strategies by practice and through consistent use of the strategies every day. The teaching strategies serve different purposes and fall under seven main purposes: assessment, explain/model, feedback, engagement, supported practice, higher order thinking, and independent practice.

Expert teachers also develop a clear knowledge of their students’ academic abilities and personal characteristics. This knowledge of students is accomplished

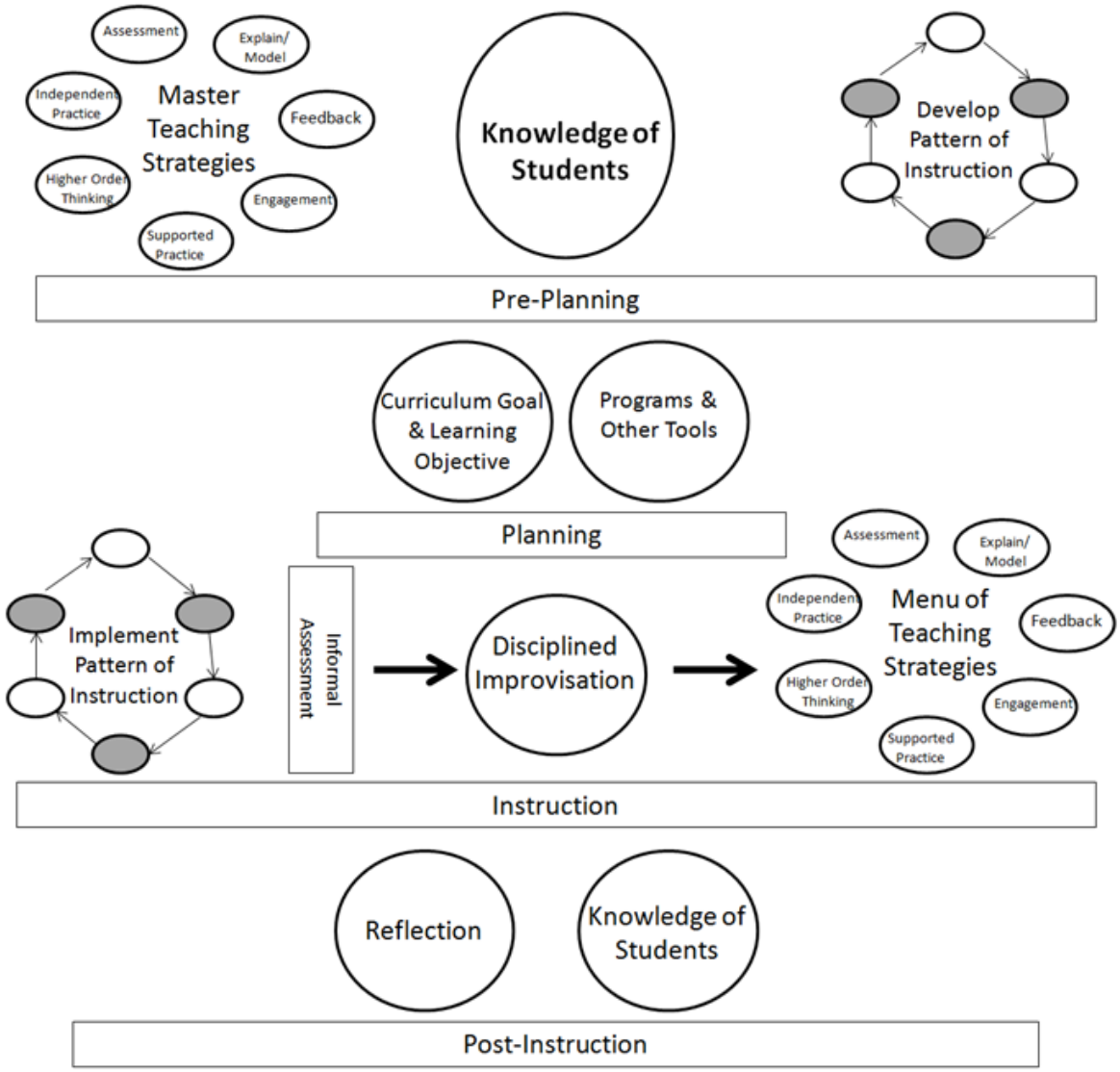


Figure 11. Expert rural elementary teacher instructional planning model. The Pre-Planning stage involves becoming fluent in a variety of teaching strategies, getting to know the students, and arranging teaching strategies into patterns. In the planning stage, the teacher clarifies the curriculum goal and the learning objective as well as determines what programs or tools will be used. The instruction stage is when the teacher implements the pattern of instruction, administers informal assessment, and based on how the students respond, improvises by selecting different strategies to use. Post-Instruction is when the teacher reflects on how the lesson went and updates their knowledge of students.

through assessment, observation, and one-on-one interaction with the students. When teachers possess a clear understanding of the strengths and weaknesses of their students, they are able to identify learning objectives that will meet the needs of the students.

Another effort made by teachers during the pre-planning phase is the development of patterns of instruction. The teachers decide a basic pattern of instructional strategies that will be used as a generic approach to instruction for each subject. An example of a pattern of instruction could be that every time the teacher begins math instruction, the lesson will always begin with an explain/model strategy, followed by an engagement strategy, followed by an assessment strategy, which is then followed by a higher order thinking strategy. This pattern is simply how the teacher approaches the lesson. It is established over a long period of time and becomes habitual.

The planning stage consists of decision making as it relates to curriculum goals and learning objectives as well as programs and other resources. The teachers use their knowledge of students to identify the learning target. Often curriculum maps or other standards documents assist with these decisions. During this phase the teachers make sure they have a clear learning objective forming the context of the lesson. Additionally, during the planning phase, teachers access resources such as program materials and other resources that will assist them in reaching the learning objective.

Planning is not completed when instruction begins. During the instruction phase of planning, the teacher implements the generic pattern of instruction developed during the pre-planning phase. When informal assessment indicates that a change to the pattern is necessary, the teacher improvises by choosing to implement one or more of the

strategies available in their menu to teaching strategies. This disciplined improvisation maintains a focus on the learning objective while adjusting the instruction based on how the students respond to the instruction.

During the post-instruction phase of planning the teacher reflects on what worked and what did not. The informal assessments and other interactions taking place between the teacher and the students during instruction lead to an updated knowledge of students' strengths and weaknesses, which in turn informs future planning decisions.

CHAPTER V

DISCUSSION

When I was a preservice teacher taking education classes from the university, I was taught to write detailed lesson plans. While student teaching, I spent hours writing detailed lesson plans each day. Soon after beginning my first elementary school teaching assignment I realized that I could not keep up with the demand of such a task due to the large number of different lessons I was expected to teach each day. A high school teacher may be able to write detailed lesson plans if they only teach two or three different repeating classes. Elementary school teachers switch between their large number of subjects and concepts too quickly and often for detailed lesson plans to be realistic.

The findings of this study help to provide an understanding of the reasons behind the differences I found between theory and practice when it comes to instructional planning. By observing planning sessions and lessons and listening to the interviews of expert teachers, I have gained a better understanding of the characteristics of expert rural teacher planning and why these teachers do not plan in the same as I was taught. Based on the findings that emerged from these data, I have created a new model of teacher planning consistent with my findings. Additionally, this investigation led me to consider several potential implications and suggestions for future research.

This chapter includes five key topics: (a) the importance of the study, (b) addressing the research questions, (c) the implications of the study, (d) suggestions for future research, and (e) study limitations. Within these topics, the details, findings, and conclusions that emerged from this study will be presented and discussed. First, I will

outline the unique nature of the study and how it contributes to the existing literature. Second, I will explain the processes these expert rural elementary school teachers followed when planning daily instruction and I will describe the resources expert rural elementary school teachers consulted as they planned instruction. Third, I will communicate the documentation of practices of expert rural teachers and the reasons these practices were employed. Fourth, I will describe possible implications for the findings that these expert teachers developed a menu of teaching strategies, the discovery of established routines or patterns of instruction constructed by putting certain teaching strategies together, the essential nature of disciplined improvisation, the focus on curriculum goals and learning objectives, and the priority of obtaining a solid knowledge of the students. These implications will be summarized as suggestions for teachers who want to begin to plan their instruction like an expert rural elementary school teacher. In conclusion, I will suggest areas where future studies are needed to expand the understanding of expert teacher planning.

Importance of the Study

Many studies directed at the topic of instructional planning have been conducted over the years. However, this study differs from the majority of research in the field in at least four ways. First, perhaps the most unique aspect of this study is the identification of the expert teachers. Few studies attempted to examine the planning practices of expert teachers or as Vygotsky calls the “more knowledgeable other” (MKO). Second, no previous studies identified research participants through a process involving student

achievement and/or student growth data. Third, the rural location of the study sets it apart because very little research concerning teacher planning has been conducted in a rural setting. Fourth, the design of the current study applies the beneficial aspects of the think aloud protocol and teaching observations to strengthen interviews with teachers.

Vygotsky's (1978) social development theory is a constructivist approach to learning. Constructivism maintains that learning occurs when individuals create meaning from experiences. The Social Development Theory further claims that the experiences from which an individual creates meaning are social experiences involving interaction with others. According to Vygotsky, learning is facilitated by the interaction with a MKO. The MKO refers to anyone who has a better understanding or a higher ability level than the learner. This study highlights the need for teachers to learn from their MKO's so as to learn how to design effective instruction. In order to be considered an MKO, a teacher needs to possess a higher ability level than the novice or beginning teacher. In this case, the MKO is the one who possesses a superior ability to teach and to realize high levels of student learning. The identification of the MKO in the research literature on instructional planning was problematic. Some studies attempted to study the MKO, but defined them as those with the most experience (Boyd, 2012; Peterson et al., 1978). Other studies went a step further and tried to identify the best teachers, but did so simply by using a recommendation from principals and other teachers (Reiser & Mory, 1991; Yinger, 1977). In each of these participant selection processes, a MKO may or may not have been truly identified. Some teachers in these studies had taught for many years, but their students did not demonstrate they were learning at high levels. Likewise, just

because a teacher is popular among their peers or principal, does not mean that their students learn at exceptional rates.

The participant selection process in the current study involved the collection of 3 years of student learning data. The assessment used was administered in the fall, winter, and spring of each school year. Therefore, I was able to identify learning growth in the students from fall to spring for 3 years. This growth could be averaged for each teacher for all 3 years. In this way, not only did we identify teachers with experience, but more importantly, we could identify the teachers who were able to realize the most student learning growth over time. Because of this process, I am confident that each of the participants in this study fit the description of a MKO. As such, there is much that we can learn from these experts.

Another aspect of this study that sets it apart from other studies is the setting. This study was conducted in a setting classified as a remote rural area. Remote areas are those that are more than 25 miles from an urbanized area (National Center for Education Statistics, 2013). The nearest urbanized area is 154 miles away from the study site. In my perusal of the literature regarding instructional planning practices, I found no studies conducted in a rural setting. This study will contribute to the literature on rural schools in addition to the literature concerned with instructional planning.

The design of this study was intended to take advantage of the benefits of the think-aloud process for data collection that include the decreased likelihood that think aloud data will be contaminated with other thoughts and influences compared to just interviewing teachers (Fox et al., 2010). Although think aloud is a valuable way to collect

uncontaminated data, the protocol requires that the researcher refrain from asking for explanations or clarifications. The think aloud technique is not an unusual method of data collection in the examination of instructional planning (Broeckmans, 1986; Peterson et al., 1978; Yinger, 1977). What makes this study unique is that I collected think-aloud and observation data first. Then, I analyzed the data in order to formulate the interview questions. By combining think aloud, teaching observations, and interviews, I was able to collect uncontaminated data AND seek explanations and clarifications leading to an understanding of the thoughts and behaviors exhibited in the think aloud and the observation.

Addressing the Research Questions

Planning Processes

The first research question for this study asked what processes and decisions expert rural elementary school teachers follow and make when planning daily instruction. Many of the most important planning decisions made by expert rural elementary school teachers take place long before they sit down to plan for any particular day. A strategy is a careful plan or method. For the purposes of this study, a teaching strategy was defined as the method by which the teacher decides to deliver instruction. Teaching strategies include the way teachers group students, how they interact with the students, the way they ask questions, the manner in which they use materials, and so forth. Most of the content of traditional lesson plans is made up of teaching strategies.

A major finding of this study is the absence of teaching strategy decision making

during instructional planning sessions. Very little time or thought was dedicated to the methods by which the teachers were to deliver their instruction. Teaching strategies, although critical to lesson delivery, did not occupy an equally critical place in the planning sessions and virtually no documentation of teaching strategies was observed. Observation field notes, however, revealed a complex and effective use of a variety of teaching strategies. Very few teaching strategies were thought about during planning sessions. The recognition of this disconnect resulted in interview questions aimed at understanding this phenomenon. What I learned led me to conceptualize teaching strategies as well polished and practiced methods of instruction which are available to the expert teachers at any moment during instruction. Based on the teacher responses, I call the totality of teaching strategies available to expert teachers a menu of teaching strategies. This is an appropriate metaphor because a menu contains a list of available options. Customers at a restaurant can choose any item from the menu and they base their decision on the time of day, the amount of money they want to spend, their mood, and so forth. Similarly, expert teachers maintain a figurative list of teaching strategy options which are available for their use. Although these teaching strategies are not written out as a physical list, the teachers choose strategies from the menu based on how students are responding, the content of the lesson, the objective of the lesson, and their own personal preferences.

This finding is significant because it provides an alternative way to view instructional planning. Rather than spending time deciding the method of instructional delivery while planning lessons, expert teachers spend their planning time thinking about

the content, the learning objective, the materials, and the students' needs. The effort to practice and master teaching strategies was done long before the planning session began. The menu of teaching strategies was always available and new strategies are added continually over time.

Participants used the menu of teaching strategies in two different ways. First, the strategies were selected spontaneously, according to individual circumstances. Second, selected strategies were organized in a pattern to be repeated every day. Participants often started their instruction applying an established pattern of teaching strategies and only broke from that pattern after something unexpected occurred. For each of the participants, the establishment of patterns of teaching strategies appears to have been completed long before the planning session. Consequently, during the planning process, the expert teachers did not need to think about which teaching strategies they were going to use when teaching any particular subject.

This finding is important because it helps to explain why expert teachers do not write detailed lesson plans and still are able to teach successful lessons. The lack of detailed lesson plans is due to the establishment of patterns of teaching strategies implemented long before planning takes place. Figure 12 is a graphic representation of a pattern of teaching strategies implemented by one of the participants.

Barbara started the lesson by explaining why the students need to learn how to add across zeros. Then she modeled the process for adding across zeros. Next, she stopped at each step of the process calling on students randomly chosen by an app on her iPad to share the answer to that particular step. Then, the teacher would randomly call on

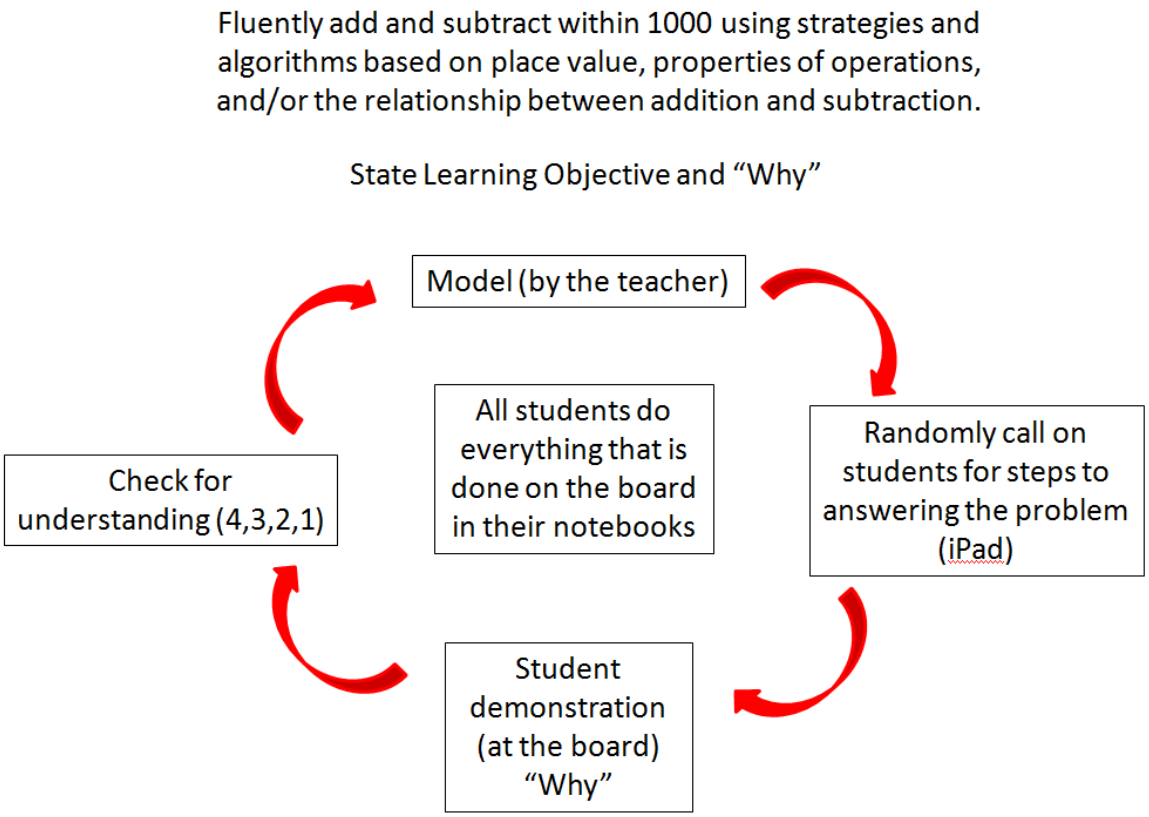


Figure 12. An example of a routine or pattern of instruction. The teachers started with the standard/objective, modeled the procedure, called on students for answers, asked students "why," checked for understanding, and then repeated the pattern. Throughout the whole lesson, students wrote all things that are done on the board in their notebooks.

a student to come to the board and demonstrate how to add across zeros. At each step of the process the teacher would require that the students explain why they did what they were doing. Next, the teacher would ask all of the students to indicate their level of understanding by showing 4, 3, 2, or 1 fingers. Throughout this whole pattern of instruction, all of the students were writing in their notebooks, everything that was being done on the board. Once the teacher observed the understanding level of the students, she repeated the pattern a second time. The teacher did not have to think about this pattern of instruction while planning because it is an established pattern that is used for most every

math lesson. It is the starting point for instruction but other strategies can be selected from the menu of strategies at any moment when circumstances dictate a departure from the established pattern is warranted.

An important finding of this study is the high degree to which knowledge of students influenced planning decisions. Based on the literature and models of instructional planning published by experts, the assumption was that the foundation of expert teacher planning is comprised of curriculum goals and learning objectives. The results of this study suggest that there is a factor of instructional planning that is even more foundational or a better starting place for instruction. This study reveals that knowledge of student needs is more foundational as a starting point for instruction rather than either curriculum goals or learning objectives. This is because the expert teachers do not waste time teaching concepts that students already know. Likewise, they do not waste time teaching students concepts that they are not ready for. Therefore, understanding the current reality of student abilities and student characteristics becomes the most important knowledge for planning instruction. Curriculum goals and learning objectives are meaningless without an understanding of how those goals and objectives compare to student knowledge base and ability levels at the time of instruction.

This finding has the potential to change the way educators approach lesson planning. Often teachers are encouraged to consider levels of student understanding after instruction. This study suggests that building an active and accurate understanding of what students know and are able to do is the first priority in planning effective instruction.

Chaos theory was also used as a framework for this study due to the unpredictable nature of classroom life. Findings from this study support the appropriateness of this framework for the investigation of planning practices of elementary school teachers. The finding that expert teachers become agents of chaos by embracing disciplined improvisation is one of the most significant results of this study. Disciplined improvisation, as it relates to instructional planning, involves making decisions during instruction on a moment to moment basis dependent upon conditions and circumstances which cannot be predicted beforehand. However, these instructional decisions include the selection of already established teaching strategies and are directed toward the attainment of a learning objective. Thus, the improvisation is disciplined because it occurs within these parameters.

The participants found that writing detailed lesson plans is a meaningless task and a waste of time because of the chaotic nature of classroom life. The expert teachers have learned that their best guesses as to how the students will respond will always be different from what actually transpires. Therefore, they expect to adjust and they plan to improvise. They become agents of chaos, not because they are causing chaos, but because they understand that it exists, they embrace it, and their selection of teaching strategies is in response to this chaos.

Disciplined improvisation was found to be an important aspect of instructional planning. This study not only helps us to understand why expert teachers do not write lesson plans, but it provides a glimpse into the cognitive aspect of expert teacher planning. Expert teachers hold off making certain planning decisions until they have

additional information in the form of student responses or reactions.

Planning Resources

The second research question in this study was examining what resources do expert rural elementary teachers consult as they planned for their daily instruction and why chose to consult these resources? The participants consulted a variety of resources as they planned their instruction. They referenced curriculum maps, standards documents, program materials, internet web sites, and other teachers.

All five participants made reference to the curriculum map published by the school district. Figure 13 shows an example of this curriculum map. The purpose of the map is threefold. First, it provides a recommended sequence or order that teachers should follow as they teach the subject. Second, the curriculum map provides a reference as to the learning objectives. The map aligns lessons with the state standards. In Figure 13 notice that lessons 3.2 and 3.3 have been skipped. Skipped lessons are those that do not correspond to state standards. Third, a chronological ideal is laid out. Teachers can pace their instruction by comparing where they are in the timeline in relation to where the map says they should be.

Topic 3: Subtraction # Sense | Nov 6-Nov 8 | 3 Days

Date	Day	Learning Objective	Suggested Lesson	Lesson Plans	Links
6-Nov	Wednesday	Students recognize situations when subtraction is used to solve a problem and write number sentences.	3rd Pearson 3.1	Lessons (0)	
7-Nov	Thursday	Students will solve problems by estimating differences.	3rd Pearson 3.4	Lessons (0)	
8-Nov	Friday	Students will solve word problems and check their answers for reasonableness.	3rd Pearson 3.5	Lessons (0)	

Figure 13. Example of a curriculum map referenced by several of the teachers.

Another commonly referenced resource was state standards documents. It is important to note the preoccupation the teachers demonstrated for the state standards. All planning and instruction observed during the course of this study had some connection to state standards. Expert teachers possess a clear understanding of state standards and ensure that they align their instruction with these curriculum goals.

A math basal program, a calendar activity program, and a phonics instruction program were all referenced by the participants. Although each of these programs contained what amounts to premade lesson plans, the experts in this study did not follow those lesson suggestions. Instead, they picked apart the programs, used the parts that they thought would work and avoiding the other parts of the programs. These programs were seen as tools available to help accomplish goals. None of the teachers followed their programs with fidelity. Instead, they altered the program to meet their needs. The internet also emerged as a frequently consulted resource. A few teachers spoke of searching Google to find fresh ideas and better activities. The internet was the means by which the teachers accessed the curriculum maps and the state standards.

Documentation Practices

The second and third research questions are closely related. What documentation do expert rural teachers make of their daily instructional planning decisions and why do they create these records? And, what instructional planning decisions are made but not recorded in any physical way by expert rural teachers and why does the teacher choose not to record these decisions? The expert teachers in this study demonstrated very little documentation of instructional planning decisions. The small amount of documentation

consisted of general weekly plans and reminder notes. The weekly plans simply provided a way to schedule the concepts being focused on at different times each day. Some of these weekly plans were electronic and some were hand written in teacher plan books. Very little documentation of teaching strategies was evident on the weekly plans.

The other type of planning documentation observed in this study was small reminder notes. Usually, these notes were written on sticky-notes which were then placed in a location where the teacher would be reminded to do something. For example one of the notes was placed in the math program teacher manual and said, “don’t do dumb video.” This was a common practice for three of the participants.

The most important finding regarding documentation of planning decisions is the consistency of the lack of documentation. None of the participants wrote detailed lesson plans. This is significant because it makes it clear that effective lesson planning and the writing of lesson plans are not synonymous. In fact, the absence of a detailed lesson plan seems to be a sign of an expert teacher.

Implications of the Study

The implications of this study will be examined in light of how new or struggling teachers might apply the findings as well as what principals and professional developers may do to help teachers to begin planning like experts. I will explore the implications of the teaching strategy menu, patterns of instruction, disciplined improvisation, knowledge of standards, and knowledge of students.

The Teaching Strategy Menu

New and struggling teachers can benefit from the finding that expert teachers maintain a menu of teaching strategies that they draw from for their instruction. Rather than spending so much time writing explicit lesson plans, novice teachers could begin to develop their repertoire of teaching strategies. Even if teachers only begin with one teaching strategy, they can practice that strategy over and over until proficiency is achieved. Then, the teachers can identify another strategy to learn. This strategy would then be added to the menu and before long the novice teacher will have a menu of several teaching strategies. As the strategies are practiced, teachers will learn their best utility. Teachers will practice moving from one strategy to another fluently. The students will begin to demonstrate proficiency with these regularly used strategies as well. Soon, any content or topic can be taught with the application of these strategies.

Principals and professional developers can apply this concept to their work by encouraging teachers to develop, maintain, and expand their menu of strategies. To facilitate this, they may need to provide opportunities for teachers to observe the teaching in other classrooms or arrange for teaching strategy demonstrations as part of trainings and faculty meetings.

Routines or Patterns of Instruction

Once a decent menu of teaching strategies has been developed, it will be important for novice teachers to think about their common instructional blocks and identify a basic pattern of teaching strategies to be followed for every occurrence of that subject. This pattern will be the way the teacher teaches that subject on a daily basis,

deviating from the pattern when the unexpected occurs or student responses dictate a different strategy is needed. Teachers will need encouragement and the opportunity to develop these patterns of instruction. Persuading expert teachers within the building or district to share their patterns of instruction may help novice teachers to have some models to base their patterns on.

Disciplined Improvisation

The implication of disciplined improvisation is that novice teachers must embrace the unpredictability of the classroom environment and expect to adjust their instruction according to student response and other factors. A detailed lesson plan is not needed and should not be encouraged. Instead, continued effort and emphasis should be put into the development of a teaching strategy menu and the ability of the teacher to move quickly from one strategy to another at any moment. Teachers must be disciplined in that they never lose sight of the standard and learning objective. All improvised efforts are intended to lead to the accomplishment of the learning objective.

Lesson plans have been shown to have such a strong influence on teachers that they tend not to deviate from their plans once instruction has begun (Shavelson, 1983). Shavelson found that by knowing the contents of a teacher's lesson plan, much of the teacher's behavior can be predicted. This has been an argument for writing better lesson plans, but from the perspective of the expert teachers in this study, it is exactly the reason they do not write lesson plans at all. If the writing of lesson plans means that they do not deviate from the plan and that instruction is predictable, the teacher is less likely to adjust instruction based on student responses and would result in instruction that may not match

the current needs of the students.

Another implication is that principals should not require written lesson plans as a means of determining the preparation level or the ability level of the teacher. Instead, the principal should be asking for the teaching strategy menu and the established patterns of instruction developed by the teacher. Perhaps a weekly calendar could be produced as well. However, detailed lesson plans and disciplined improvisation cannot occupy the same space at the same time. It has to be one or the other because they are opposite approaches.

Curriculum Goals and Learning Objectives

One of the implications of this research is that teachers desiring to become experts must obtain a deep understanding of the state standards and curriculum goals. These standards form the basis for all of the learning objectives. Novice teachers should study the standards and reference them regularly while planning. Professional developers could create courses of study, tutorials, and other reference material to assist with the deep understanding of the standards. They should assist teachers in making sure that their interpretation of each standard is accurate.

Knowledge of the Students

An essential first step in planning is to get to know the students. Novice teachers should peruse students' cumulative folders before school starts and then spend as much time as necessary after school starts to gain knowledge of the academic and personal characteristics of the students. It is essential that teachers develop this knowledge as

quickly as possible as content and standard rigor decisions are based on this knowledge.

Professional developers and administrators can help novice teachers by requiring the teacher to complete a student knowledge form soliciting information regarding the academic strengths and weaknesses as well as personality information for each student. This requirement will ensure that the novice teachers go through the work required to get to know the students as quickly as possible. Additionally, because student knowledge changes quickly, teachers must continually adjust their knowledge of students through day-to-day informal assessment.

Rejection of Program Fidelity

The teachers participating in this study universally rejected the idea that they ought to implement their curricular programs with fidelity in order for students to learn at high levels. In fact, their collective opinions on the matter were quite the opposite. They viewed the curricular program as only one of many available resources to use during instruction.

Although four out of the five participating teachers examined the programs every day, much of what was provided in the program was not implemented. Instead, teachers carefully chose which parts, if any, of the program to implement. Some parts of the programs were avoided regularly. Teachers replaced these parts of the programs with other activities and resources they believed would better lead to student learning.

These findings have important implications for curriculum directors, publishers, and others responsible for adoption of curriculum programs. If the most successful teachers are picking apart the programs, perhaps an all-inclusive program that is designed

with the assumption that teachers will move through the program sequentially is not the best way to support teachers. Perhaps teachers would be better served by providing them with a variety of resources that stand alone for each concept. Perhaps teachers would be better served by allowing them to spend the money that would have been spent on a program, on resources of their choosing. If nothing else, it appears that schools or districts who adopt programs may be better off to understand that the best teachers are unlikely to show fidelity to that program, but will use it as one possible tool to meet their needs.

Suggestions for Novice Teachers

The findings from this study provide a step-by-step guide for novice teachers just beginning instructional planning. First, make a list of the teaching strategies that are already part of your menu. Second, make a list of the teaching strategies that you want to add to your menu. Perhaps some observations of other teachers will be necessary. Third, practice each desired strategy until they can be fluently implemented. Fourth, practice moving from one strategy to another smoothly. Fifth, for each teaching block or subject, build a pattern of instruction composed of the teaching strategies from your menu. Sixth, study the state standards for your grade level until you have them memorized. Not by word, but by meaning. Seventh, make sure an easily accessible copy of the standards is available at all times. Eighth, each time a lesson is planned, derive a learning objective from a standard to provide the focus of the lesson. Make sure this learning objective is appropriate according to your knowledge of student strengths and weaknesses. Ninth, look over the cumulative folder for each of your students. Tenth, assess students to

determine academic strengths and weaknesses. Last, use informal assessment multiple times throughout each lesson in order to keep your knowledge of students accurate as they are learning every day.

Suggestions for Future Research

There are several questions that have emerged while analyzing the data from this study. These questions should be considered in future research studies examining the instructional planning practices and include the following: How can we help novice teachers to know their students better? Does it have to take months to get to know students well or can it be accomplished in a short amount of time? If so, then how? How can we help novice teachers to develop a deep understanding of the state standards? Does it have to take years to develop a deep understanding of the state standards or can this be accomplished in a short amount of time? How can professional developers and universities help teachers to develop and implement a menu of quality teaching strategies? Can the development and implementation of a menu of teaching strategies be accomplished quickly? How can professional developers and universities help teachers to develop and implement patterns of instruction for their content areas? Can the development and implementation of patterns of instruction be accomplished quickly? Does standardized assessment impact expert teacher planning at the unit or scope and sequence level?

Future studies should investigate strategies to help new teachers to gain knowledge of their students and knowledge of standards as quickly as possible. Also, it

would be important to investigate ways to help new teachers to become fluent in the implementation of selected teaching strategies so they can add them to their menu.

Limitations

The nature of this study and its findings should not be accepted as a complete answer to the complicated questions surrounding instructional planning. The small sample size limits the ability to generalize to a larger population, but it does provide a starting point for future research. Moreover, the fact that all participants in this study participated in the same professional development activities throughout their careers indicates that this may account for some of the striking similarities in their planning practices. A study conducted elsewhere using similar selection criteria may result in different findings.

Data analysis in this qualitative study was conducted through the theoretical frameworks of Vygotsky's (1978) social development theory and chaos theory (Larsen-Freeman, 1997). These theories, while providing a valuable framework, also had the potential to bias my analysis. Had I been working from a different theoretical framework I may have noticed different themes or categories. Furthermore, my own experiences as a former elementary school teacher have developed in me a bias that manifests itself in the theoretical framework of this study.

Another possible limitation of this study is regarding the fundamental attribution error. The fundamental attribution error is made when research on expert teachers attributes success to personal qualities rather than situational influences. Although the

fundamental attribution error is a potential limitation to this study, the diversity of the five participants minimizes that liability. Four participants were female and one was male. The years of experience ranged from 6 to 35. The teachers served in four different schools and do not associate with each other, with the exception of Barbara and Elizabeth who teach in the same building and were once on the same grade level team.

Summary

This study provides valuable insights into the planning thoughts and practices of expert rural elementary school teachers. The findings reported here have the potential to change the way educators look at the planning process. The evidence suggests that expert teachers plan in strikingly similar ways. The contrast between the findings of this study and common practice are significant. This study gives the novice educator an opportunity to learn from More Knowledgeable Others without ever having met them. Additionally, this study provides concrete examples of how expert teachers accept chaos theory. Instead of trying to control circumstances with rigid lesson plans, they become agents of chaos through disciplined improvisation.

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EDUCATION

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Ph.D. in Teacher Education and Leadership **2015**
Dissertation: "Expert Rural Elementary School Teachers' Instructional Planning for Effective Instruction"
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Utah State University
Administrative Certificate **2005**

Utah State University
Master's in Education **2003**
Elementary Education

Southern Utah University
B.S. of Arts **1999**
Elementary Education
Minor: Spanish
Emphasis: Political Science

College of Eastern Utah
Associates of Arts **1997**
Emphasis: Education

AWARDS

Teacher of the Year for W. Russel Todd Elementary	2003 – 2004
Teacher of the Year for Uintah School District	2003 – 2004
ABC/UBI Administrator of the Year	2008 – 2009
Technology Innovator in Education Award Nominee	2010 – 2011

TEACHING EXPERIENCE

W. Russel Todd Elementary, Uintah School District
2nd Grade, 4th Grade, and 5th Grade **1999**

Connections After School Program Director **2003**
Coordinated programs, hired staff, managed budgets, and taught classes.

ADMINISTRATIVE EXPERIENCE

Monticello Elementary, San Juan School District
Principal **2004 – 2011**

San Juan School District
Elementary School District Supervisor **2011 – 2012**
Supervise and evaluate elementary school principals, develop and implement School Improvement Grants, develop and implement professional development for elementary school teachers and principals, and district NWEA MAP Assessment Coordinator.

Ashley Elementary School
[Language Consultant] **2012**
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PUBLICATIONS AND PAPERS

"RTI: Logistics of Math Intervention"
The Utah Special Educator 2009

LANGUAGES

English – native
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MEMBERSHIPS

Utah Association of Elementary School Principals
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