


2015

An Evaluation of Math Assessment Policy Process in a Southwestern School District

Alicia O'Brien
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Alicia O'Brien

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2015

Abstract

An Evaluation of Math Assessment Policy Process in a Southwestern School District

by

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EdS, Walden University, 2011

MA, Western Governors University, 2004

BS, New Mexico State University, 1994

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Teacher Leadership

Walden University

September 2015

Abstract

This project study addressed the lack of evaluation of a math assessment policy in a rural elementary school district in the southwestern United States. This district implemented a math assessment policy in the spring of 2005, yet no evaluation had been conducted to determine whether the policy and its continued implementation were meeting the intended outcomes. Two conceptual frameworks that drove the study were Sabatier's theories of policy process and Bardach's eightfold path to policy analysis. Using interviews of the district's 3 K-12 math teachers and 5 administrators who had proximity to the math assessment policy, this case study explored how the math assessment policy was implemented, as well as whether the policy had met the goals it was originally created to address. Data were deconstructed by coding and then reconstructed in order to create a thick description of the findings. A review of local media documents was also used to illustrate the community's response and reaction to the local district's assessment policies. The 5 themes that developed from analysis of the interview data focused on uncertainty in the ranks, sharing power, collaborating among the mathematics disciplines, policy evolution, and policy outcomes. The results presented in the evaluation report showed that administrators believed the policy was achieving its goals but teachers did not. The evaluation included an executive summary with recommendations to facilitate better communication about the policy throughout the district. Positive social change implications resulting from the evaluation of the math assessment policy include changing the decision-making process at the local district from a top-down model to include more input from practitioners in order to create policies that maximize student success and teacher support.

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Dedication

This paper is dedicated to my husband, Patrick J. O'Brien. None of this would have been possible if not for his dedication to our children and support of me in all that I do. You are a righteous, Godly, and determined man who puts your family and their needs above your own. I want to be like you when I grow up.

This paper is also dedicated to my children, Liam and Brigid, who learned to be patient over the course of the last few years as I completed this milestone. Thank you for always understanding when I had to tell you that I couldn't do something for you because I was writing. I think your self-sufficiency is a gift that has come to you from this process. I also know that you are both excited about all the newfound time we will have now that this process is nearing the end.

Finally, this paper is dedicated to my mother, Sandra Lynn Taber, who inspired me throughout my life to value education. As a working mother, you showed me that a mother's work outside of the home can make her children confident people with high work ethics. You also always showed us love and could do this all while being highly successful at your craft. I am grateful for the trails you blazed as a first-generation career woman with advanced degrees in education and business. You taught me that if I put my mind to it, there is no limit to what I can achieve. I wish you were here to see me make this accomplishment, but I know without a doubt in my mind that throughout this journey, you have been looking down on me and offering your support and protection from the heavenly plane on which you now reside.

Acknowledgments

I would like to begin by thanking all of the local district personnel who agreed to be studied for this project. I would like to thank my committee chairman, Wallace Southerland III, for reading my drafts countless times in order to provide feedback and improve my proposal. I would like to thank Dr. Tom Cavanaugh for his extensive knowledge of the IRB application and process. Finally, I would like to thank Dr. Diana Greene and Dr. Wendy LaRue for their valuable feedback as experienced educators.

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Section 1: The Problem

Introduction

The purpose of this study is to evaluate the policy process that led to a math assessment policy in a local school district. This evaluation of the policy process marks the first instance in this district of the collection of empirical data on the implementation of a mathematics assessment policy and its effect on teachers and administrators charged with carrying out its procedures. The setting was a small school district in the southwestern United States. The absence of empirical data on the implementation of the math policy contributed to gaps in practices related to K-12 math instruction prior to the onset of this study, as the data analysis later shows. The existence of the problem was verified by district leadership. In a letter, the superintendent stated, “The math exit assessment policy has not been evaluated since its creation” (personal communication, July 26, 2012). The absence of any policy analysis data available to the public prior to this study also supported the need for the study. A review of various district resources, such as the website, school board minutes, and the district’s policy manual, had not revealed evidence of any policy evaluation or analysis, which highlighted the importance of this project study. Evidence of the problem was supported by the local district’s research director, who confirmed that no evidence of a math assessment policy evaluation existed within the district’s archives (personal communication, February 21, 2013). The district superintendent also saw a need to evaluate the math assessment policy and stated in a letter, “I am in agreement that there is a need for analyzing the district’s exit

assessment policy for math. The math policy has not been evaluated since its creation” (personal communication, July 26, 2012).

The local school district studied was small, consisting of fewer than 10 elementary, middle, and high schools, and served nearly 1,200 students. There were fewer than 100 teachers in the district when the study was conducted. The district had a history of declining enrollment, with approximately 1% of the student population moving out on an average annual basis (district school board minutes, 2014; Hudson, B., 2014b).

The populations that were primarily affected by the absence of empirical evaluation data on the mathematics assessment policy were district-level administrators and K-12 math teachers. The math assessment policy had an effect on teachers by requiring them to use formative common assessments to inform their instruction and end-of-year exit assessments to determine student readiness for the next grade level. Administrators were involved in the math assessment policy because they were initially required to use the policy as a means to improve teacher instruction (senior administrator, personal communication, 2010). Later, as state teacher evaluation mandates came into effect, these assessments were used as a portion of teacher evaluations. Analyzing the results of the changes brought about by the mathematics assessment policy in reference to teacher and administrator behaviors was important because of the potential influence these behaviors had on professional collaboration and student achievement.

Students are also affected by the absence of policy evaluation data. According to Marzano (2007), the level of achievement and learning students can attain is directly influenced by how schools are run and how teachers manage their classrooms and

instruction. The former superintendent of curriculum and instruction at the study district was interviewed by the State Department of Education in 2010. In this interview, the superintendent of curriculum stated that the mathematics assessment policy was intended to change the way the school was run and how teachers delivered instruction:

The assessments took place at different intervals throughout the year. Each team developed the assessments based on any indication there was a need to determine the effectiveness of the instruction based on student needs and strengths during any grading period. We did not want specific dates, except each team had to develop exit assessments given the last three weeks of a course. All of the results were used to determine student growth and curriculum alignment and passed on to next year's teachers to help guide instructional planning.

Now that an evaluation of the mathematics assessment policy's creation, implementation, and outcomes has been conducted, the local district has information about how students, teachers, and administrators were affected. An investigation of whether or not the mathematics assessment policy goals were attained helped to uncover the effects the policy had on students and their achievement, collaborative teacher practices, the means by which teachers informed their instruction, the degree to which the goals of the policy were met, and teacher and administrator perceptions of the policy.

In the spring semester of 2005, the superintendent provided an implementation plan to all mathematics teachers for the mathematics assessment policy (senior administrator, personal communication, 2005). The local policy required mathematics teachers to create common assessments at all grade levels. Mathematics teachers were

required to document that each question on the assessment met state standards. Teachers were required to administer these assessments a minimum of three times per year in K-8 and three times per semester in high school. Mathematics teachers were required to record the mathematics assessment results of each student in a spreadsheet. Each item within the spreadsheet was tagged with a state standard code. Finally, the spreadsheets compiled by mathematics teachers were submitted to the assistant superintendent in charge of curriculum.

From the standpoint of larger educational populations and settings, Webb (1995) warned of the harm that local assessment policies can have on students when the policies themselves are not regularly evaluated for the quality indicators of purpose, methods of standard setting, level setting, determining final standards, effect on what is taught because of the assessment, and school management versus central control. Milton Town School District (2011) in Vermont has an assessment policy that describes the need for collaboration among teachers, school board members, administrators, community members, and students. Collaboration among teachers, school board members, administrators, community members, and students could be a possible avenue not only for carrying out Milton's assessment policy, but also for evaluation of the policy itself.

Rationale

According to the district's mission statement, "[the district] is dedicated to providing a superior learning environment for students of all ages and providing a springboard to success in higher education and the world at large." The local district is often seeking solutions that will improve student achievement, classroom instruction, and

school culture. The creation of the local math assessment policy is one such solution that has now been in place for several years in different forms, as will be addressed later. Before the implementation of the math assessment policy, there had been no prior research on math assessments in the local district or in districts with similar demographics. Furthermore, the math assessment policy might have continued indefinitely without any meaningful thought given to its continued effect on students, teachers, and schools had this study not been conducted. An indication of the previous lack of policy evaluation was the fact that searches of all district documents including the district website, school board minutes, policy handbook, and personnel handbook demonstrated no record of analysis of the math assessment policy.

The local district had received very little media coverage within the county or state, with the exception of the local print newspaper and a separate electronic newspaper. The district has strong ties with the State Department of Education and federal education initiatives, with school employees serving on both state curriculum and standards committees, as well as the Southern Regional Board under the Gates Foundation educational initiatives.

Data from the State Department of Education in 2012 showed that the local district in question was in need of remediation and had been on corrective action due to declining student achievement since 2004. The purpose of the math assessment policy was to address these five issues:

(1) What are the student group's needs and/or have they already learned? (2) Based on the data, what are the contributing factors? (3) Develop a plan to address the student needs and/or strengths. (4) Implement the plan with fidelity. (5) Use common assessments and NWEA [Northwest Evaluation Association] to determine the effectiveness of the plan in regard to SSAP [State Student Assessment Program] proficiency levels. In addition, we required all teacher teams to develop formative assessments (common assessments) as content area teams after reviewing all SSAP data. Furthermore, math teachers assessed standards to get students to grade-level proficiencies.

Despite use of the math assessment policy, it is unclear whether or not the local school district has closed the achievement gap for special education students and minorities. The achievement gap issue will be discussed more thoroughly in later sections. Closer examination and analysis of the mathematics assessment policy served to explain why it is difficult to tease out achievement gains.

Definitions

During an evaluation of the policy process, it is important to clearly define the terminology being used. Certain terms have specific meanings to people who study education policy and policy evaluation at large. Below are the terms typically related to educational assessment policies that are used in this evaluation of the policy process.

Administrators: Both the principals in a school who manage or have executive charge of the school and responsibility to see that the math assessment policy is implemented, and those having responsibility for the general organization, direction, and

supervision of the school district, its programs, and its staff, possessing accountability to parent groups and the school board.

Assessment: An ongoing process aimed at understanding and improving student learning through feedback. Assessment helps to inform students of what their future learning should be and informs teachers of how their instruction can improve (Black & William, 1998; Marzano, 2010; Walvoord, 2010).

State Student Assessment Program (SSAP): A state achievement test delivered to students in the spring of each school year to determine student levels of achievement in mathematics.

Effective Math Assessment Policy: According to the superintendent in charge during implementation of the math assessment policy, the goal of the policy was “to allow teachers to look at specific and detailed levels of learning for each student and allow teams to focus their instruction by groups of students and/or individual students”. An effective math assessment policy will help to determine what students learned, identify factors contributing to a lack of learning, and address student needs and strengths.

Evaluation: The process by which a policy is determined to have accomplished the goals for which it was designed (Bardach, 2008, 2011; Theodoulou & Kofinis, 2004).

Interpretive theory: A theoretical framework that describes human and organizational behaviors in abundant detail that allows individuals outside the culture or organization to understand the context of these behaviors (Bastedo, 2005; Geertz, 1973; Hamman & Hopson, 2013; Humphrey, 2008; Miller, 2002).

Math assessment policy: The policy and practice of math teacher teams creating common assessments, analyzing student growth measures, and reporting these results to the superintendent in charge of instruction.

Policy: Formal strategic decision-making processes engaged in by a governing body. Individuals and communities are categorized and assigned positions in different social, political, and power contexts (Hamman & Hopson, 2012).

Policy analysis: The process of uncovering complex information about how a policy was created, the policy's expected outcomes, the policy's results, or how the policy was put into place (Fischer, 1995; Patton & Sawicki, 1993; Yanow, 2000).

Policy implementation: The act of carrying out the math assessment policy, by either creating the assessments for the policy, administering the assessments, collecting the data from the assessments, or a combination of these actions (Lane & Hamman, 2003).

Policy outcomes: The results that come from use of the math assessment policy (Lane & Hamman, 2003).

Policy process theory: The theoretical framework that explains the processes individuals within an organization go through when attempting to implement a policy that is put in place by superiors in that organization (Klein, 2001; Lane & Hamman, 2003; Sabatier, 2007; Spillane, Reiser, & Reimer, 2002; Weick, 1995).

Significance

The analysis of the local assessment policy process was meaningful because it provided important insights regarding the effectiveness of the policy and suggestions to

improve the policy. Searching through district literature confirmed that no formal analysis of the math assessment policy had taken place prior to this study. The goal of the study was to evaluate the local mathematics assessment policy. Conducting a narrative case study related to the math assessment policy of this southwestern school district has provided stakeholders in the educational community the opportunity to be informed about the math assessment policy and how the policy has affected teacher instructional focus, teacher responsibility to the policy, teacher collaboration, and student achievement in mathematics. The results of a qualitative narrative study can assist educators in understanding the complex issues and challenges that come about when a policy is implemented.

The more urgent significance of the project study involves helping the local district with effective assessment policies. A more effective assessment policy could lead to higher student achievement and help educators uncover areas in which students need to improve and grow in mathematics. According to Ceneviva and Farah (2007), the manner in which assessment policy is disseminated and later evaluated has a direct effect on overall school achievement. Assessment policy evaluation should be transparent to the parents and community of a school.

Implications of Not Evaluating the Policy Process

Policy process demands investigating information about how a policy was created or put into place, the policy's expected outcomes, and the policy's results (Fischer, 1995; Yanow, 2000). Effective policies evolve over time and only improve if given adequate analysis and regular evaluation. Part of policy process theory is the systematic breaking

down of a broader issue into more manageable categories, which provides an opportunity to gain a deeper understanding regarding how the particular element contributes to the broader problem. A cognitive bias may be formed by anchoring created policies to judgments and substantiations other than policy theory.

Social science theory demonstrates that bias is furthered when one interprets information about a policy based on preconceived notions not founded in theory; therefore, a deeper understanding of policy and practice cannot be achieved without analyzing policy. If the policy contains gaps in practice or implementation, then the development of a solution to these gaps and a resolution of these shortcomings can never be realized.

Guiding/Research Question

Past research related to the evaluation of assessment policies beyond the local district is wide ranging and varied. Cho and Kingston (2011) conducted a policy analysis of assessments created to meet the requirements of No Child Left Behind (NCLB) for students with disabilities and found that data on these students are not reliable enough to be used by teachers to improve their instruction. Woessman (2011) recommended analyzing policies on merit pay that involve student assessment scores from the Program for International Student Assessment (PISA). Pickowsky (2012) used assessment to evaluate student learning outcomes at the college level and advised registrars to use these results to properly place students in their future courses.

Block (2012) evaluated a policy involving open- versus closed-book math assessments at the college level and concluded that a policy supporting open-book

assessments resulted in deeper learning. Ward (2012) recommended that governments create evidence-based policies targeting math assessments. This study is significant because although policy evaluations regarding assessment exist within the literature, there is a lack of literature specific to local math assessment policies, demonstrating both a gap in practice and in the literature. This study has potential to assist with better assessment policy formation and adds to the literature on math education policies.

I addressed a local problem that represented a gap in practice, which was that the math assessment policy had not been evaluated for effectiveness, teacher perceptions, or outcomes preceding this study. The district superintendent confirmed that the math assessment policy had never been evaluated. The research questions addressed in the study centered on the effectiveness of the policy, the nature of the policy, the outcomes of the policy, and teacher perceptions of the policy. These research questions were as follows:

What organizational context led to the creation of the math assessment policy?

- a. How was the math assessment policy implemented?
- b. What actors were involved with the implementation of the math assessment policy?

1. How was math instruction conducted before and after the implementation of the math assessment policy?
2. What are the perceived outcomes associated with the implementation of the math assessment policy, and what is the basis for the perceived outcomes?

Relationship to the Local Problem and Research Questions

The Common Core Standards require that all schools examine their educational practices and local policies and ensure that they lead to college and career readiness for students (Common Core, 2014). Etherington (2011) defined *narrative research* as collecting stories of participants' experiences in order to collect data capturing complex, deep, and nuanced understandings of the participants' involvement in organizational phenomena. I conducted a qualitative narrative evaluation of the value of the local math assessment policy and its processes as they evolved from stakeholders in the local education community. This study can inform decision makers in other districts in similar situations about the quality of the local math assessment policy. This policy evaluation uncovered approaches that may improve the policy, thereby enhancing student mathematical knowledge and achievement.

Limitations

There are several possible limitations inherent within this study. The first limitation specific to this policy evaluation is that the period of time in which this study was conducted, 2 to 4 weeks for data collection, was relatively short. Longitudinal effects that can occur in qualitative research may mean that conclusions drawn during a short period of time could be different from data analyzed during a long period of time

(Houghton, Casey, Shaw, & Murphy, 2013; King, & Horrocks, 2010; Maxwell, 2004).

Because data were collected during a period of less than 2 months, the study may not have captured the full effect of the math assessment policy over time.

The second limitation was that all participants self-reported data. Self-reporting data can be problematic because the researcher must rely on the honesty and the accurate memory of the participants (Attride-Stirling, 2001; Brutus, Aguinis, & Wassmer, 2012; Simera, Moher, Hoey, Schulz, & Altman, 2010). Even when participants are intending to report with complete honesty, they may lack the ability to maintain impartiality. This impartiality will affect the ability of respondents to accurately report what they experienced. Participants may lack the understanding necessary to answer questions accurately. Finally, participants who self-report may possess response bias and be more likely to respond either positively or negatively depending on their disposition or personality traits.

The third limitation is that the results of a qualitative case study cannot be generalized to the larger population of school districts in the same manner it is possible to do with a quantitative statistical analysis (Merriam, 2009; Patton, 2001; Rubin & Rubin, 2012; Tracy, 2010). Quantitative studies in general sample a large number of participants. The samples studied are analyzed numerically, and measurements are used to determine the level of reliability and validity of the study. In contrast, studying only one location with seven participants in a case study may limit the transferability of the findings of this analysis. No previous evaluation of the math assessment policy and its development process had been conducted to which the results of this study can be compared; therefore,

theories that resulted from the policy analysis will have no prior empirical findings to which they connect (Hajer, 2003). As a final point, difficulties in predicting effective improvements of the policy create their own limitations (Saint-Germain, 2002).

Review of the Literature Addressing the Problem

During a literature search on the math assessment policy in the winter of 2013, only three newspaper articles and no academic articles were found. The first article involved lagging test scores within the state's high schools (Fincher, 2013). The second article involved changing school schedules and cutting academic programs to save money due to state budget cuts (McQuiggin, 2010). The final article addressed common assessment results and their decline (Hudson, 2008). The common assessment results mentioned in Hudson's article were propagated through the math assessment policy. However, no literature evaluating the math assessment was found.

Governmental databases that were used to identify educational reform practices were those of the U.S. Department of Education and the State Department of Education. Evidence related to the relevance of analyzing the math assessment policy was identified through Boolean searches of *policy analysis*, *assessment policy*, *assessment*, and *education policy reform* in Google Scholar, Education Research Complete, ProQuest, Sage, and ERIC. All searches were conducted in English. The local district website was also reviewed for any mention of analysis of the math assessment policy and directions to staff about the math assessment policy. Public data obtained from federal and state education department websites, the district website, school board minutes, the policy

handbook, and the personnel handbook also demonstrated that the math assessment policy had not been evaluated.

Conceptual Framework

Evaluation has the potential to provide data regarding a policy's effectiveness (Foster, McBeth, & Clemons, 2010; Quinn, Dunn, McAdam, McKitterick, & Patterson, 2014). If a policy is not examined to determine whether or not its outcomes have been achieved, then additional policy changes may be made through uninformed processes that lack efficiency and effectiveness.

The conceptual framework of the study was rooted in policy process theory (Ciolan, 2013; Hartley, 2009; Sabatier, 2007). Policy process theory consists of institutional analysis (Hardy & Koontz, 2009; Nowlin, 2011; Ostrom, 2011; Sabatier, 2007; Thomas & Jorgensen, 2009; Weible, Heikkla, deLeon, & Sabatier, 2011). According to policy process theorists, the level of government plays a vital role: The closer a bureaucratic body is to the problem, the more likely individuals in the organization may be to use the policy evaluation process and change a current policy (Howlett, Ramish, & Perl, 2009; Karger & Stoesz, 2013; Knoepfel, Larrue, & Varone, 2011; Sabatier, 2007). Policy process theory involves democratic empowerment and a common purpose among members of an organization (Hartley, 2009). The policy process framework also breaks the policy-making process into smaller, more manageable pieces; examines the role of structural barriers and policy makers' responses to public opinion; and considers how the policy is used by the organization.

Finally, policy process theory consists of the cultural, societal, and political characteristics of a local setting. These frameworks explain how policy makers use financial incentives and disincentives, documents, mandates, persuasion, influence, and capacity building to compel members of an organization to follow the requirements of a policy (Sabatier, 2007; Thomas & Jorgensen, 2009; Veselý, 2012, 2013). The policy process framework was chosen because it explains the processes individuals within an organization go through when attempting to implement a policy and understand the goals of the policy, as well as the behaviors and environment that result from the policy that is put in place by superiors in that organization (Klein, 2001; Lane & Hamman, 2003; Spillane et al., 2002; Weick, 1995). The stages of policy process theory are explained below.

The Stages of Policy Process

Problem identification. The beginning stage of policy process is problem identification. In the first stage, the problem is defined and articulated by stakeholders such as school board members and school administrators (Chan & Seddon, 2012; DiNitto, 2010; Howlett, 2010; Howlett, Ramesh, & Perl, 2009; Petersen, 2009; Sabatier, 2007). The problem identification stage also involves identifying problems that warrant a policy, freeing up space on the agenda by removing old policies that have lost their relevance, and deciding what problems have come to the forefront. An example of identifying a policy problem is NCLB, which gave legitimacy to a federal education policy by forcing the public school system to test students on a state-by-state basis and

report those results to the U.S. Department of Education in order to receive federal funding (Brill, 2011; Ravitch, 2010).

Once policy problems have been identified, nondecisions may become a form of policy making itself (DiNitto, 2010; Hu, Xu, Dinev, & Ling, 2011; Marr & Huang, 2014). Special interest groups that are resistant to change are often behind policy push back. Nondecision based policies also occur when administrators at state and local levels avoid policy or action that they know their constituents will not support. The federal Race to the Top initiative exemplifies policy making by avoiding policy decisions. Many states have avoided Race to the Top funds because feedback from voters in their state shows that their constituents oppose its requirements (Marr & Huang, 2014).

Agenda setting. The second stage of policy process is agenda setting. When a policy is formulated, other alternatives should be considered and discussed by stakeholders and interest groups (Baumgartner, 2013; Chaisse & Matsushita, 2012; Farouk & Husin, 2011; Mason & Brown, 2013). Policy proposals are often crafted at this stage, and in some bureaucratic circles, involve educational lobbyists from state departments, policy entrepreneurs such as students and teachers advocating for systemic change in schools, and private funding groups such as the Gates Foundation (Brill, 2011; Ravitch, 2010; Zhao, 2012).

Policymaking. The third stage of policy process is the policy-making stage. Once problems have been identified, policies must be made that address the problems identified in the previous stage. Those policies must be adopted by the appropriate administrative body. At the policy-making stage, not making a policy decision creates its

own policy (Farough, 2013; Hahn, 1990; Pinn, 2014). To persevere past this stage of policy-making, the policy must be legitimized (Stone, 2012). Some of the ways policies are legitimized are public statements made by elected officials, executive orders, budgets that allocate money to support the policy, laws, rules, regulations, and administrative decisions. If legitimacy is not achieved, then the policy will not be developed, and the status quo is maintained (DiNitto, 2010). In certain cases, it is necessary to legitimize a policy by analyzing the amount of money required to carry out a policy. Regarding the math assessment policy, more time was required from teachers to implement the policy, but there were no additional financial costs identified by the local district in the policy's implementation (senior administrator, personal communication, 2010).

Implementation. The next stage of policy process is implementation. In many cases, participants fulfill the policy's requirements after a law or rule is passed. Implementation in terms of the math assessment policy includes teacher-created assessments, scoring, and reporting those scores to the superintendent's office (Crews, Crews, & Burton, 2013; Lee & Faugher, 2013; Peterson, 2009; Yoon, Song, & Lee, 2013). In other instances, a policy is passed, and nothing happens or changes because of the policy. The implementation stage can also be a continuation of the policy-making process. Other issues that may arise are administrators' unsuccessful attempts to separate themselves from the politics of the policy. The policy may have more effect on the organization in the implementation stage than policy makers intended. At the same time, opponents of the policy may continue to prevent the policy's implementation. Finally,

conflict may continue at this stage between policy makers and those opposed to the policy.

Evaluation. The final stage of policy process is evaluation. There was a need for the evaluative stage prior to the onset of this study, making it a highly significant tool for filling in gaps in practice at the local level. An overall policy evaluation was the ultimate purpose of this study as it aligned to the theoretical framework of policy process theory (Mott, 2013; Murchan, Loxley, & Johnston, 2009). Policy evaluation consists of many steps and variations to the process (Mears, 2010; United Nations General Assembly, 2007). These steps include checking the effects of the policy on the organization or bureaucracy that it has been implemented in, making formal and informal evaluations, guaranteeing the coherence and completeness of the policy, ensuring that the policy has met its objectives, checking if the policy is being followed with fidelity by the institution, verifying that the leadership behind the policy is of high quality, and ensuring that the policy is performing as it was designed to be accountable to taxpayers and stakeholders. Specific variations within education involve acquisition and interpretation of reform policies by teachers and taking the interests of stakeholders into account (Chikritzhs, 2009; Creemers & Kyriakides, 2010).

Viewing educational policy evaluation from a local perspective was essential to the study; however, there is much to learn from the literature involving policy process theory and policy analysis from a national and global perspective. Policy analysis research can provide guidance when evaluating local education policy. The literature in this section is an outline of national and local assessment policy studies and their

findings. Strategies to gather the research for the literature review included the examination of professional journals emphasizing policy analysis, noted books on education policy and its theoretical frameworks, and scholarly websites. Pertinent data were taken from these sources to create the review of the literature.

Chitty (2009) and Naidu (2011) indicated that teachers interact with policy on a regular basis and must make choices based on policy in their daily lessons. Stein, Kaufman, Sherman, and Hillen (2011) found that many school districts have policies that specifically outline what teachers must teach in mathematics at particular grade levels. The research from those who investigate teachers' interactions with policy can best be described as a policy analysis (Naidu, 2011; Rizvi & Lingard, 2013; Weimer & Vining, 2005). Within the context of policy process theory, teachers' perceptions of their students, classrooms, and schools that have been influenced by the math assessment policy were explored in order to evaluate the assessment policy.

Challenges Associated With Policy Implementation

Walsha and Anthony (2009) identified the importance of implementing instructional policies at the local level regarding mathematics. The authors recommended that teachers and administrators collaborate on changes in math instructional policy and fulfill these changes within the classroom. They advised that math faculties, teams, departments, and teacher education programs should be given adequate resources. Walsha and Anthony concluded that teachers, principals, coaches, mentors, researchers, parents, students, and policy-makers must play a part in student math achievement. Policy process theorists investigate the effect policies have on participants in their natural

setting to explain why and how individuals react to policy (Geertz, 1973; Klein, 2001; Lane & Hamman, 2003; Leedom, 2001; Spillane et al., 2002; Weick, 1995).

Poverty predicts achievement better than reforms in education policy (Brill, 2011; Hochschild, 2003; Ladd, 2011; Ravitch, 2010). In an atmosphere of constant policy change and implementation, individual teacher attempts to meet student needs and the socioeconomic backgrounds of students are often neglected. NCLB legislation requires that all public schools assess student achievement in mathematics in third through 10th grade using tests that measure performance against state-adopted academic content standards (U.S. Department of Education, 2011; Zucker, 2004). Adopting assessment policies that are based on state standards does not promise student achievement gains, and attempts within the Chicago schools have shown mixed results (Luppescu, Allensworth, Moore, de la Torre, & Murphy, 2012).

Utility of Conceptual Framework

Policy process theory was used to explain how individuals may have understood the math assessment policy and the process they went through to implement the policy within the local district as well as the final stage of the policy process, which requires that the policy be evaluated. With the process of implementation in mind, the research questions described in the previous guiding questions section were central to the study and helped to explore problems with the policy, teachers' and administrators' perceptions of the policy, and ways in which teachers and administrators believed the policy could be improved. Analysis and interpretation of the data collected from these open-ended questions were closely examined to uncover how teachers' understandings of the goals of

the policy affected the way that teachers taught, the professional change experienced by teachers and administrators, and the transformation of the school environment (Gigerenzer & Selten, 2002; Gueudet & Trouche, 2009; Leedom, 2001; Simon, 1990; Weick, 1995).

The Policies of a Nation at Risk

The National Commission on Excellence in Education (1983) report titled “A Nation at Risk” (ANAR) was the definitive policy document for the 1980s. ANAR called for higher standards with an emphasis in mathematics and science to make U.S. students career and workforce ready and globally competitive. The Center for the Study of Mathematics Curriculum (CSMC, 2005) summarized the educational report from ANAR, the participants, the findings of the report, and the concluding recommendations. The commission expressed concern about how many teachers were teaching in the science, technology, engineering, and math (STEM) fields without any experience or credentials and how few schools required an adequate amount of course work in these fields for graduation.

Policy recommendations from ANAR have yet to be realized in U.S. schools. Many schools still do not require high school students to complete three or more credits in mathematics and science to receive a diploma (Anderson & Chang, 2011; Carol Morris Consulting & The Lee Institute, 2011; CSMC, 2005). Brill (2011) noted that the advice made by the ANAR commission was largely ignored by public schools when the document was issued. ANAR is the origin of the assessment policies surrounding NCLB and Race to the Top educational reform initiatives (Brill, 2011). Without the concerns

addressed in ANAR, education policy would likely not have taken on the shape it has in the present day. Many at the time saw ANAR as a social emergency in the making. Monumental, catastrophic thinking has created an environment of conspiracy theories surrounding teachers and their unions and has been counterproductive in the search for policies that create more effective schools and better modes of instruction (Ravitch, 2010).

Goldberg and Harvey (1983) discussed their participation on the National Commission on Excellence in Education and their perspective on the commission's findings. They reacted to the public's response to ANAR and emphasized reasons to be optimistic about the gains public schools can make with students. They urged readers not to overreact to their committee's findings and to seek a positive avenue in responding to these findings. Goldberg and Harvey called for positive proactivity among educators, not reprimanding educators through outside authority and political pressure.

Rothstein (2008) analyzed the recommendations made in ANAR more than 2 decades later and commended the commission's attempt to make a coherent, systematic, and comprehensive national curriculum, but they noted the regrettable lack of U.S. educators who had accomplished this task. Reaction to ANAR can be seen in light of the Cold War and the political urgency generated from it. Educating U.S. students was not only important; excellent education was seen as the patriotic duty of the citizens and government. Ansary (2010) found that ANAR was in large part a political tool for the Reagan administration to take the subject of education from Reagan's political competitor in the 1984 election and make it his own.

Outcome and Standards Based Education Policies

Hood (2011) documented education policy measures that took place in Chicago public schools in the late 1990s and early 2000s. Despite education reform, Chicago's schools have failed to close the achievement gap between minority students and their nonminority peers.

One of the major teachers' unions outlined nine components for creating quality education policy. These components are:

1. Standards must focus on academics.
2. Standards must be grade-by-grade or clustered for selected grade spans in elementary, middle, and high school.
3. Standards must be clear and specific enough to lead to a Common Core curriculum.
4. Standards must include particular content in each of the four content areas—English, math, science, and social studies.
5. Standards must attend to both content and skills.
6. Standards must be manageable, given time constraints.
7. Standards must not dictate how material should be taught.
8. Standards must be rigorous and “world class.”
9. Standards must be written clearly enough for all stakeholders to understand (American Federation of Teachers, 2003).

Recommendations such as these foreshadowed education policies that led to the Common Core Standards that states have recently adopted to qualify for Race to the Top funds (U.S. Department of Education, 2012).

The No Child Left Behind Act and the Consequence of Its Policies

Ackley (2011) discussed the consequences of NCLB policy and asserted that the goal to have 100 percent of U.S. students proficient in mathematics and language arts by 2014 is unrealistic, problematic, and will soon result in all schools in the U.S. being labeled as failing. Finn (2008) documented his individual experience as an education policy maker in addition to outlining the history of U.S. education during the last 60 years. One consequence of the assessment policies implemented by NCLB was schools, teachers, and administrators rigging the testing system to show false gains in student test data (Finn, 2008). Schools that have cheated during NCLB reform (Baltimore, New York, Washington D. C., Atlanta, and Philadelphia) were contrasted with hardworking school districts making true gains with their students. Honest school districts have been overlooked by the Adequate Yearly Progress (AYP) policies of NCLB (Roth, 2011).

Ravitch (2010) identified further evidence of schools cheating under NCLB policies in her chapter on “The Trouble with Accountability” (p. 155). Ravitch cited many instances of top-performing school districts gaming the system only to be discovered later during state department education auditing as having cheated on high stakes tests. She concludes by stating that the more teacher performance hinges on these scores, the more cheating will occur.

Simpson, Kite, and Gable (2006) conducted cluster analyses of 113 districts in Massachusetts from 2003 to 2005. Simpson et al. demonstrated that variations among schools participating in NCLB are a result of how resources are used and allocated in those school districts. It is difficult to determine which resources contribute to increased student achievement because there are so many confounding variables such as student economic status present within each system at one time.

Brown (2008) studied the interplay of education policy related to accountability and local control. Brown demonstrated prior to NCLB policies, National Assessment of Educational Progress (NAEP) documented Wisconsin students were high achieving and not in need of reform. He argued local control has been effective in keeping NCLB reforms in check at fairly low cost to school districts in Wisconsin. In Brown's opinion, NCLB policies could potentially lower student achievement in Wisconsin.

Rotherham and Dillon (2007) reported on all 50 states' AYP measurements required by NCLB policy and the unrealistic idea that 100% of these states' students can become proficient in mathematics and reading. Rotherham and Dillon concluded there exists wide variability and inconsistencies in how each state calculates its own AYP. The researchers called into question the validity of the very measuring tools required by federal assessment policies.

Brown (2010) also discussed how growing up in the specter of NCLB policies has affected college students enrolled in teacher education programs. Potential educators have shaped their idea of what it means to be a teacher around the environment NCLB created in each classroom they participated in prior to college. Students growing up

during the NCLB period of education policy are more skeptical about the high stakes tests than previous generations and feel they limit what could be a more enriching educational experience.

Goldstein (2011) charted the effect of media on education policies during the Bush Administration era leading up to and including the inception of NCLB legislation. Goldstein cited numerous examples of negative media portrayal of teachers and their unions that have resulted in a lack of respect for the profession of teaching as a whole in the United States. The reported cases of ineffective teachers are disproportionate to the actual makeup of the profession. Poor teachers and low scores are over-reported; whereas, high scores and good teachers are often underreported or not mentioned at all in the media. Nevertheless, negative reporting of public schools and their teachers has significant influence on education policies enacted at the local, state, and federal level.

Particularly related to this study are federal policies that result in adoption of local policies. Grissom (2009) scrutinized the factors that determine how public school boards implement local policies in the era of NCLB. Grissom concluded that professional decision-making practices and racial homogeneity of members are highly predictive of board success in implementing policy.

School boards are the primary local influence on education policy and their professionalism directly affects teachers' daily practices. McIntosh (2011) described new high school assessment trends resulting in more testing of freshmen, sophomore, and junior students and fewer exit assessments for seniors as a requirement for graduation. To view assessment data collected as a requirement of NCLB policies, schoolview.org is a

log of public records involving all student performance records for all public schools in the local district's state and showed their classifications in terms of both growth and NCLB requirements for AYP.

From a federal policy perspective, NAEP is the assessment used to nationally rank state educational systems in the U.S. (Institute for Education Sciences, 2011; "The Nation's Report Card", 2010). Lane et al. (2009) described how NAEP scores are calculated and calls validity based on equity into question. Klein (2010) discussed the vague objectives of the NAEP mathematics assessment. Klein claimed that it is unreasonable to expect gains in the NAEP because the test is meant to measure IQ. Educators should proceed with caution when using NAEP data to determine the quality of instruction in the United States. Klein further stated policies on assessment, as mandated through NCLB, tied directly to state standards, are more reliable. In recent years equity has improved as inclusivity of students requiring special accommodations have increased (Kitmitto, 2011; Maxwell & Shah, 2011).

On the question of how U.S. schools compete with foreign schools, Sahlberg (2007, 2012a, 2012b, 2012c) pointed out stark differences between Finnish and U.S. school leadership, instruction, and testing practices. Finnish teachers are the overall leaders of their schools, whereas in the U.S. a management top-heavy with a top-down administrative style remains the predominate norm in school leadership. The ability for teachers to oversee their schools and have the ultimate say in how their job is conducted and their subjects are taught makes teaching one of the most popular careers in Finland.

Mondom (2011) outlined the educational history leading up to the writing of NCLB and discussed problems that have arisen in schools that implement the policy at the local level. These issues stem from the unintended consequence of NCLB, resulting in most schools emphasizing only mathematics and reading, with the idea that students will learn everything they need when only concentrating on these two subject areas. The difficulty with only concentrating on math and reading is that many districts often use the NCLB agenda to do away with their fine arts programs, including music and theater programs. Less of an emphasis on history and civics resulted, creating a group of citizens that does not know their rights and are intellectually narrow. The largest injustice is that U.S. children may have no knowledge of how the U.S. came to be or major historical events that were important to its founding. A thin exposure to history and the arts resulted in high school graduates who are not well rounded and cannot think critically.

Stein, Kaufman, Sherman, and Hillen (2011) discussed the results of local district policies that require mandatory algebra for all students and their effects on student achievement. NAEP data were used to study these effects. They demonstrated algebra for all only works when effective interventions for at-risk students are available and in frequent use. The researchers recommended education policies that require algebra for all must also contain a well-thought-out intervention policy.

Walker and Mohammed (2008) recommended changing NCLB policy by using the NAEP rather than state assessments. Rather than look for 100% of all students to be advanced and proficient by the year 2014, it would better serve schools and students to look at score growth as a measure of effective teaching and take into account socio-

economic status factors as part of the calculation. Many states have currently enacted some form of a growth policy rather than using AYP calculations, but as of yet, have not used the NAEP assessment (U.S. Department of Education, 2012).

Race to the Top Policies

Brill (2011) told the stories that have affected the nation's current education policies, including funding of education by private organizations such as the Bill and Melinda Gates Foundation, social attitudes of Americans toward education and the relationship between unions and federal policy makers. He chronicled Race to the Top as it affected public schools in New York's Knowledge is Power Program (KIPP) schools in Texas and high-performing teachers in the Teach for America program. He noted burnout is a significant part both of administrator and teacher turnover in America's high-performing charter schools and contended reformers and public officials will have to develop new policies when working with teachers' unions in order to create sustainable lasting improvements in public education.

Through Race to the Top the U.S. Department of Education asks public schools to advance school reform by:

- Adopting standards and assessments that prepare students to succeed in college and the workplace and to compete in the global economy.
- Building data systems that measure student growth and success, and inform teachers and principals about how they can improve instruction.
- Recruiting, developing, rewarding, and retaining effective teachers and principals, especially where they are needed most.

- Turning around our lowest achieving schools (U.S. Department of Education, 2014).

Congruent with the requirements outlined in the aforementioned legislation, Varela (2011) documented factors that contribute to teachers in a district being unqualified and noncertified for their positions. These factors include teacher shortages and student socio-economic status. Sometimes schools cannot meet the requirements of federal policy at the local level. For instance, students who are poor are far less likely to have classroom teachers who are highly qualified, despite federal education policy requiring it since the 2005-2006 school year (U.S. Department of Education, 2012).

Sewlyn (2007) investigated teacher opinions of NCLB and the effects on their classroom instruction, professional development, and hiring pool. Sewlyn found NCLB has decreased the number of qualified teachers graduating from universities and the number of new students entering the profession. NCLB has also decreased the number of minority teachers and males entering the profession. The aforementioned research findings are important for policy makers to consider if increasing the number of qualified male and minority teachers is a future goal. Cohn (2007) researched education policy that gives classroom teachers the authority over their curriculum and assessments—important issues to consider in the creation or analysis of policies involving teacher autonomy. Teacher autonomy improved the quality of instruction and increased student achievement gains.

Implications for Possible Project Directions

Possible directions that could have been taken other than evaluating the policy process are using an impact evaluation, an organizational review, and process monitoring (Aguinis, 2011; Bergman, Ellingsen, Johannesson, & Svensson, 2010; Janiszewski & Uy, 2008; Kepes, McDaniel, Brannick, & Banks, 2013; Lichfield Diocesan Board of Education, 2011; World Bank Group, 2013). An impact evaluation would have assessed changes in the well-being of teachers, administrators, and students attributed to the math assessment policy. The well-being of participants was not the focus of this study. Information on well-being alone does not tell stakeholders the level of effectiveness of the math assessment policy, nor does it answer the questions posed in the previous sections of this study.

An organizational review involves obtaining objective and well informed feedback about the math assessment policy (Council of the Great City Schools, 2012; Sitek, Seifert, & Klaus-Dieter, 2010; Swan, Bresnan, Newell, Robertson, & Dopson 2010; Vithessonthi & Thoumrungroje, 2011). The purpose of an organizational review is to improve an organization's internal communication and shared understanding of the math assessment policy by providing an opportunity for teachers and administrators to provide anonymous and thorough feedback about the math assessment policy. As is the case with impact evaluations, an organizational review will not provide empirical evidence regarding whether or not the math assessment policy was effective. Improved communication and understanding were desired outcomes of the policy analysis.

However, this was not a sufficient outcome to determine the effectiveness of the math assessment policy.

Process monitoring is a formalized system for measuring the performance of an organization or service (Rodriguez, Neussbaum, Lopez, & Sepulveda, 2010; Thornton, Ocasio, & Lounsbury, 2012; Van Gestel & Hillebrand, 2011). Process monitoring measures how well the school district is performing and uses these measures as a management tool. Process monitoring also assesses how outcomes are attained over time. The credibility of the policy is reported to the public systematically to identify effective practices within the policy. Process monitoring may be a lengthy process because it requires continuous annual collecting and analyzing of information to compare expected results to yearly performance of the outcomes of the math assessment policy. A lengthy time frame for data collection is beyond the scope and sequence of a doctoral study project because of the length of several years required for data collection.

Transition Statement

Section 1 was an explanation of the problem and its significance. Section 2 contains the methodology that documents the broader problem. The broader problem was that this study marks the first time the local math assessment's policy process has ever been evaluated. Section 3 includes the research design and methodology. This section includes the qualitative research design and approach, participants, data collection, analysis, and the limitations associated with the research.

Section 3 consists of an analysis of the math assessment policy process based on the findings from the interviews of teachers and administrators (Jitendra, Griffin, & Xin,

2010). This section is made up of an introduction that describes the project, goals of the project, rationale of the chosen project genre, and how the problem will be addressed. Another review of the literature addressing the project is included in Section 3 along with discussion of needed resources, supports and barriers, and roles and responsibilities of stakeholders. Finally, project implications are discussed including social change implications, and the importance of the policy analysis to local and national or global stakeholders.

Section 4 is an explanation of the advantages and disadvantages of the math assessment policy, its importance, implications, applications, and directions for future research. This section involves a reflection on what I have learned as a scholar, practitioner, and project developer. Recommendations to address the problem differently, analysis of scholarship, project development and evaluation, and leadership and change are also discussed.

Section 2: The Methodology

Introduction

Description of the Project

The project is an evaluation of the math assessment policy process in a southwestern school district. In order to bring about effective district policies, all stakeholders must understand the level of effectiveness of current policies. The means by which to determine efficacy is a policy evaluation. For this evaluation of the processes that led to the math assessment policy and its continuation, I developed an evaluation report, using both Sabatier's (2007) five components of the policy process and Bardach's (2011) eightfold path of policy analysis. In this project, I identified the strengths and weaknesses of the math assessment's policy process. I used contributions from teachers and administrators via participant interviews to evaluate the policy process's positive outcomes and drawbacks. The project concludes with recommendations for improvement of the math assessment policy and future development of policy within the local district.

Goal of the Project

The goal of the project was to evaluate the processes used to create the math assessment policy and to determine whether the policy had accomplished its intended outcomes. In this section, the project, which was an evaluation of a local math assessment policy, is described. The study is framed by the theoretical frameworks of Sabatier's (2007) policy process theories and Bardach's (2008, 2011) eightfold path, which was the framework that assisted in evaluation of the policy.

Selection of Qualitative Analysis Research Design

I evaluated the policy process concerning math assessment through qualitative research. According to Creswell (2008) and Lodico, Spaulding, and Voegtle (2010), qualitative researchers explore relationships among people and problems. I focused on teachers and administrators, evaluating the successes and shortcomings of a math assessment policy in a local setting in the southwest. Teachers and administrators were interviewed about their experiences with a local math assessment policy. Using qualitative research allowed me to delve deep into participants' thoughts. The selection of interviewing as the means of inquiry supported a focus on exposure and understanding thick descriptions of experience.

Thick description is the process of focusing on contextual features when observing and interpreting social meaning (Creswell, 2008; Ponterotto & Grieger, 2007; Rankin, 2011). I noted not only what was happening among people within an organization in a literal sense, but also what might be causing a particular event. Qualitative research involves a variety of research approaches and allows a researcher the opportunity to inquire about the natural environment without establishing or testing predetermined hypotheses (Denzin & Lincoln, 2011; Newman & Benz, 1998). According to Jacob (1988), qualitative research is aimed at investigating the realities of everyday circumstances.

Selection and Justification of the Type of Analysis Conducted

A case study evaluation of a math assessment policy was conducted in a rural southwestern school district. The justification for using a case study evaluation was that

in discussing the math assessment policy and reviewing district resources including the personnel handbook, it was evident that an analysis of the process that was used to develop the policy had not been conducted prior to this study. The lack of analysis of the math assessment policy was confirmed by the senior administration (senior administrator, personal communication, 2012). The math assessment had not been evaluated before the onset of this study; therefore, a gap in practice was filled through this study.

Organizations such as school districts need to address possible gaps in local practice to determine whether money and time should continue to be spent on carrying out a policy. In addition, organizations need to determine whether policies are being carried out in the way in which they were intended.

Overall Analysis Goal

The overall analysis goal was to explore the successes and/or weaknesses of the math assessment policy as perceived by the administrators and teachers who created and administered the assessment mandated by the local policy. A secondary goal of the analysis was to determine whether the policy was effective in reaching the goal of greater student achievement in math. The final goal of the analysis was to determine whether or not future changes should be made to the math assessment policy.

Participants

Criteria for Selecting Participants

The math assessment policy was implemented in the local district in the fall of 2005 (senior administrator, personal communication, 2014). Those invited to participate were K-12 mathematics teachers and administrators who had been working with the math

assessment policy for between 1 and 9 years. Teachers and administrators who had used the policy for 5 or more years had the most depth and breadth of experiences to share and were ideal participants for the evaluative study. Teachers and administrators who had fewer than 5 years of experience with the policy demonstrated a different frame of reference with regard to the policy. Including a cross section of experienced and inexperienced teachers helped to bring depth and objectivity to analysis of the policy process. Participants were interviewed for 1 hour or less and took time after the interview to read through the transcribed interview, review the findings, and confirm correct interpretations. Creswell (2008) and Lodico, Spaulding, and Voegtle (2010) referred to this process as *triangulation*.

Number and Justification of Participants

Three teachers, three administrators who had been teachers at the onset of the policy and then became principals, and two administrators who had been using the policy since its inception were interviewed for this study. The small number of participants allowed for deep inquiry during interviews to uncover each participant's detailed experiences with the math assessment policy (Creswell, 2008; Lodico et al., 2010; Merriam, 2014; Patton, 2002). Quantitative instruments restrict responses to predetermined classifications by using standardized instrumentation and analysis. Consequently, quantitative researchers are able to gauge reactions of many participants, which can increase the amount of data and therefore breadth. Conversely, qualitative studies usually investigate only a few cases, with great depth, exhaustive descriptions, and context enhancing the study with depth of knowledge from participants, rather than

scanning the surface with breadth of knowledge as is the case with quantitative analysis. A qualitative study was ideal for achieving this level of depth with the small number of participants who were included in the study.

Procedures Used to Gain Access to Participants

Data collection took place when Institutional Review Board (IRB) approval was granted and approval from the local district's superintendent was verified. Requests for interviews were presented to six teachers and six administrators. Of these 12, three teachers and five administrators agreed to participate in this study. These participants signed consent forms demonstrating their voluntary cooperation in the study prior to data collection. I ensured that vulnerable populations were protected, and all requirements for the IRB's research on human subjects were met. I completed NIH certification (729287), and received an approval reference number from IRB: 04-23-14-0168413.

Methods for Establishing a Researcher-Participant Relationship

According to Balthasar (2011), transparency in the researcher-participant relationship is paramount in establishing trust. To establish a trusting relationship with participants and ensure that participants gave fully informed consent, an explanation of the effect of an analysis of the math assessment policy was disclosed. The participants were informed, their interviews were recorded, audio recordings were destroyed within 60 days, and transcriptions are locked and password protected and will continue to be until May 10, 2019, as required.

Measures for Ethical Protection of Participants

Three teachers and five administrators were interviewed based on the assurance of confidentiality of participation. Lodico et al. (2010) pointed out that informed consent is required for all participants in all cases. In the analysis of the math assessment policy, participants were provided consent forms and asked to provide signatures prior to data collection. Necessary components of the informed consent form that cited the risks, benefits, and procedures involved in the study were provided. The district's superintendent was solicited for approval of the study prior to data collection. Each participant was identified with alphanumeric coding to preserve participants' confidentiality. All data collected from interviews are securely locked and password protected.

Data Collection

Methods for the Collection of Qualitative Data

The conceptual framework of policy process theory guided data collection (Klein, 2001; Lane & Hamman, 2003; Sabatier, 2007; Spillane, Reiser, & Reimer, 2002; Weick, 1995). Throughout data collection, identifying markers of the policy process were investigated. The distinct steps of problem identification, agenda building, policy formation, policy implementation, and policy evaluation were noted during data collection and incorporated into the interview questionnaire.

First, invitations to participate, which included the nature and purpose of the study and statement of IRB approval, were emailed to all prospective teachers and administrators. One follow-up email was necessary for participants who did not respond

to the first email. Some teachers and administrators who were approached declined to participate in the study, citing too many obligations during the last month of school taking up their time. Participants were asked to sign an informed consent document prior to the interview. Once participants were determined, interview dates and times were scheduled at the convenience of the participants. All interviews were conducted onsite at the local setting unless otherwise requested by the participant. The interviews were completed within a 2-week time frame and scheduled at the convenience of the participants.

A researcher-designed instrument was used to guide open-ended interviews. To ensure confidentiality, each participant was assigned a number for identification during and following the interview. These interviews were intended to last between 60 and 90 minutes per interview. Each interview was audio recorded using my password-protected iPod Voice Memo app. I transcribed the data into printed form and coded for data analysis of emergent themes that were used to create thick descriptions (Creswell, 2008). All participants were given the opportunity to member check by reviewing the findings and interpretations.

Instrumentation

A researcher-created interview instrument was used in the study. The interview instrument consisted of the interview questions (see Appendices C and D). According to Turner (2010), pilot studies are a very helpful means to refine interview questions; however, according to Lodico et al. (2010), pilot samples are used primarily with populations in which there are a large number of people that a sample can be collected

from. In this case, there were only 12 people making up the population who had used and were using the math assessment policy within the local district, and only eight members of this population agreed to participate in this study. Conducting a pilot study would likely have resulted in even fewer people taking part in the final study. The number of participants within the study was maximized to the extent possible by avoiding a pilot study.

The interview questions were aligned with the guiding questions present within the previous section, as demonstrated through the Template for Aligning Research Questions with Interview Protocol (see Appendix D). The interview protocol was used to discover teacher and administrator perceptions of the math assessment policy in terms of meeting its original outcomes, its effect on math instruction, teacher and administrator perceptions of the policy, and its effect on student achievement (see Appendices B and C).

Implementation Plan

The researcher-created interview instrument was intended to give insight into the benefits and costs to teachers of conducting the assessment policy as required by administration. Responses identified points for future improvement of the assessment policy. Each interview took less than 1 hour. Nunnery, Ross, and Bol (2008) substantiated the validity of using data on teacher perceptions as a tool for analyzing educational policies. Therefore, eight personal interviews were used in gathering data for the study to explore educator perceptions of the successes or failures of the mathematics assessment policy. The interviews were conducted in a location requested by participants

and audio recorded for transcription post interview. Scripting notes were also taken during the recorded interview for comparison during analysis.

System for Keeping Track of Data

I used qualitative research with interviews as the strategy of narrative data collection. I used face-to-face interviews as the data collection method. King and Horrocks (2010) noted that the use of interviews for narrative research designs allows the participants and researcher to interact in a demonstrable way that results in deep exploration of the experiences of the participants. I recorded, transcribed, and coded the data for emergent themes to organize and keep track of the data. Data are currently stored securely. Five years from May 9, 2014, when data collection ended, the data will be destroyed so that study participants may remain confidential (Creswell, 2008).

I conducted qualitative interviews with eight participants. Interviews consisting of 11 questions were conducted with math K-12 teachers and administrators familiar with the math assessment policy; these interviews were audio recorded. The audio-recorded interviews were transcribed, member checked for accuracy, and peer debriefed for validity and reliability. Initially, participants were interviewed based on the order in which they responded to the email requesting participation and when they requested to be scheduled. All transcripts were reviewed line by line for each participant. Once a possible theme was identified, an identifying phrase was created, and this phrase was assigned a color. Discrepant themes were assigned a color different from common themes for ease of identification.

The Process for Generating, Gathering, and Recording Data

The conceptual framework of policy process theory guided data collection (Klein, 2001; Lane & Hamman, 2003; Sabatier, 2007; Spillane, Reiser, & Reimer, 2002; Weick, 1995). Throughout data collection, identifying markers of the policy process were investigated. The distinct steps of problem identification, agenda building, policy formation, policy implementation, and policy evaluation were noted during data collection and were incorporated into the interview instrument.

I e-mailed invitations to participate, including the nature and purpose of the study and statement of IRB approval, to all participating teachers and administrators. Follow-up e-mails were sent to those who did not respond to the first e-mail. In response to these two requests, eight out of 12 participants agreed to be interviewed. Participants were asked to sign an informed consent document prior to the interview. Administrators granted permission for teachers from their school to be interviewed. Participants determined which interview dates and times were most convenient. All interviews were conducted onsite at the local setting, except in two cases in which the participants requested to be interviewed at home. All interviews were completed within a 2-week time frame.

Finally, a researcher-designed instrument was used to guide open-ended interviews. To ensure confidentiality, each participant was assigned an alphanumeric code for identification during and following the interview. These interviews lasted 45 to 60 minutes. I audio recorded each interview using my password-protected iPod Voice Memo app, transcribed the data into printed form, and coded for data analysis of

emergent themes that could be used to create thick descriptions (Creswell, 2008). All participants member checked the transcription to review the findings and interpretations and found them satisfactory in depicting their interview. A peer debriefer was also used and stated agreement with the interpretations and findings, indicating that they were reasonable and reliable by stating, “This all looks good to me” (personal communication, 2014).

A researcher-created interview instrument was utilized in the study. The interview instrument consisted of the interview questions (See Appendices C and D). The interview questions aligned with the guiding questions present within the previous section as demonstrated through the Template for Aligning Research Questions with Interview Protocol (See Appendix D). The interview protocol sought to discover teacher and administrator perceptions of the math assessment policy in terms of meeting its original outcomes, its effect on math instruction, and teacher and administrator perceptions of the policy, and its effect on student achievement. Explanation of the instrument has been included in the following section.

The self-created interview instrument was intended to give insight into the benefits and costs to teachers of conducting the assessment policy as required by administration. Responses identified points for future improvement of the assessment policy. Nunnery, Ross, and Bol (2008) substantiated the validity of using data on teacher perceptions as a tool for analyzing educational policies. Eight personal interviews were used in gathering data for the study to explore teacher perceptions of the successes or failures of the mathematics assessment policy. The interviews were conducted in the

participants' classrooms or offices, with the exception of two participants who requested to be interviewed at home, and audio recorded for transcription post interview.

Role of the Researcher

The role of the researcher in the local setting was teacher and mathematics department chairperson, coach, and mentor of the district's only high school. It was important for the researcher to be mindful of the possibility of power asymmetry and avoid it wherever possible (Humphrey, 2008). Participants were selected who did not have a subordinate role to me, the researcher. The largest number of participants worked in other schools. Participants were my acquaintances and had very little professional influence from me, as I was not a supervisor or administrator to them. To decrease power asymmetry, as the researcher, I restated interviewees' responses and included my interpretation of what the interviewee stated (Van der Vegt, deJong, Bunderson, & Molleman, 2010).

Data Analysis

Participant Interviews

The purpose of data analysis was to analyze a local mathematics assessment policy in a southwestern school district. The process for organizing the data for analysis included the review of interview data from multiple points of view and interpretation of that data through understanding teacher and administrator perceptions in-depth (Creswell, 2008; Denzin & Lincoln, 2011). Analysis consisted of data obtained from open-ended interviews. The theoretical framework of policy process theory was intimately connected to the analysis of data because during analysis, answers to participants' questions about

problem identification, agenda building, policy formulation, policy implementation, and policy evaluation were discerned (Ceneviva & Farah, 2007; Chikritzhs, 2009; Cho & Kingston, 2011; Petersen, 2009).

During the open-ended interview process, different characteristics of a qualitative case study design were used (Creswell, 2008; Janesick, 2004; Mills, 2003; Seidman, 2012). First, the exploration of how the math assessment policy worked K-12 and what administrators and teachers thought about the policy during its implementation and continuation were studied. In addition, the discovery of how the math assessment policy evolved since its creation and whether its intended outcomes were realized were pursued and evaluated.

Inductive reasoning was used to carry out the interview process. The concepts described by teachers and administrators about their instructional practices in relation to the math assessment policy were revealed. Likewise, concepts described by administrators about school-wide factors that were affected by the math assessment policy were explained. Finally, the purpose of dialogue with interview participants was to discover points of view, to organize experiences, and make sense of the effect on instruction and student achievement.

Thick Description

An important step in the data analysis process included thick descriptions of the routine use of the math assessment policy by faculty and administrators that express the perception of the respondents (Geertz, 1973; Leslie, Paradis, Gropper, Reeves, & Kitto, 2014; Redding, 2005). Creswell (2008) indicated this data analysis step entails an

environmental account of observable facts organized into categories. Quotes from participants were used to capture the fundamental nature of respondents' perceptions and help describe and identify themes of the math assessment and its policy process.

Thematic Analysis

The use of thematic analysis was used to determine the opinions of teachers and administrators using the math assessment policy in the local district (Halverson, Graham, Spring, Drysdale, & Henrie, 2014; McLean & Griffiths, 2013; Tate, Elliam, & Kirchoff, 2009). This analysis provided insight into the themes surrounding policy process theory and what respondents considered important to discuss regarding issues of policy formation, implementation, and evaluation within the theoretical framework. As part of the thematic analysis the context revealed the reasons administrators and teachers found the assessment policy a useful tool to inform instruction. Conversely, part of the thematic analysis also found that administrators and teachers found parts of the math assessment policy problematic as a tool to inform instruction.

Coding for Themes

Coding used in the data analysis process included searching for patterns from participant responses and coding for themes. Thematic coding helped to link together common themes that occurred among interviews to show the connections, similarities, and differences between participant experiences (Attride-Stirling, 2001; Denzin & Lincoln, 2011; Rubin & Rubin, 2012). The following steps were used in the coding process:

1. Define coding categories.

2. Assign code labels to the categories.
3. Classify relevant information into the categories.
4. Test the reliability of the coding.
5. Measure the reliability of the coding.
6. Locate the sources of unreliability in the coding. (Raymond, 1992)

Using these steps, specific theme codes were determined after interviews were conducted. The major coding categories align with the theoretical framework of policy process theory including problem identification, agenda setting, policy formation, policy implementation, and policy analysis (Stone, 2011; Vesely, 2012; Weimer, & Vining, 2005; Yanow, 2000). Coding was explored with subcategories from these major themes.

Originally, themes emerged from the 10 findings mentioned in the previous section on outcomes. These themes were generated from both the math teachers' and administrators' data analysis. After continuing the color-coding process and getting feedback from my committee chair, I combined the data into five themes. The themes identified were: (a) Uncertainty in the ranks, (b) Sharing power, (c) Collaborating among the mathematics disciplines, (d) Policy evolution, and (e) Policy outcomes.

Uncertainty in the ranks referred to the different perceptions teachers and administrators had regarding the math assessment policy. Administrators in every case expressed a belief that all applicable teachers were using the policy. Conversely, in each case for the participants that were teachers none of them expressed a belief that all teachers were currently or had in the past used the math assessment policy.

Sharing power related to how teachers were accessed for their buy-in with the policy. Both teachers and administrators asserted that top-down administration was used to instill the policy in the beginning. Administrators expressed a belief that teachers currently own the policy and that it is no longer simply an administrative requirement. Teachers expressed a belief that the policy was no longer widely used by all schools in the district.

Collaborating among the mathematics disciplines was associated with the fact that several participants indicated that the math assessment policy resulted in a change in practice. That change in practice was that teachers had to write assessments in group leading to collaboration. The change in practice also related to teachers helping each other with student achievement when teachers found they were weak in a standard another teacher that was stronger in that standard could assist that teacher in improving instruction in that area.

Policy evolution was connected to sharing power in that the policy started as a top-down mandate and then over time moved to teachers owning their students' assessment outcomes so that they can determine what to teach. Policy evolution was also linked to how assessments were revised, edited, and changed from the onset of the policy to present day due to changing from state standards to common core state standards.

Policy outcomes showed that to some extent, although difficult to determine, the policy improved student achievement and helped to close achievement gaps. Participants expressed a belief that the policy either in the past or at the time of data collection met the

outcomes of improving student achievement. The participants also expressed that since the standards have changed the degree to which this can be determined is complex.

Each of the five themes was connected to one of the three research questions:

1. What organizational context led to the creation of the math assessment policy?
How was the math assessment policy implemented? Theme five provided relevant data for this question.
2. How was math instruction conducted before and after implementation of the math assessment policy? Theme five provided relevant for this question.
3. What are the perceived outcomes associated with the implementation of the math assessment policy and what is the basis for the perceived outcomes?

Themes one through four provided relevant data for the final question.

The participants agreed that math assessment policy originated from a need to make sure all standards were being taught in a consistent manner K-12. Participants also discussed a more collaborative nature amongst educators, adapting assessments to new standards, and informing instruction as the means by which the math assessment policy changed teacher instruction over time.

Perspective and Story

Gubrium and Holstein (2009) urged researchers go beyond the data collected from interview transcripts and consider the context from which participants tell their stories. For instance, the way a subordinate employee might tell her story may be very different than the way a supervisor might tell the same story, even though they have experienced the same assessment policy. Perspectives differ from participant to

participant and those perspectives were considered as part of the analysis because all participants had their own set of circumstances that affected the telling of the same experience.

Procedures for Dealing With Discrepant Cases

To increase the validity of the proposed policy evaluation, it was essential to determine during analysis where discrepant data were present (Cohen, Manion, & Morrison, 2000; Maxwell, 2004; Merriam, 2009). Asking participants to verify the interpretation of their interview was the first step in identifying possible discrepant cases within the data. When discrepancy arose it was thoroughly and accurately reported. Eliminating bias and statements that may lead the reader allows the reader to make his own conclusions about discrepant cases. When data differed from the major themes of the study discrepant cases or rival explanations have been include with fidelity in the data analysis.

Rival explanations are data that are contrary to findings from similar sources of data (Patton, 2001; Yilmaz, 2013; Yin, 2011). It was important to examine data that do not coincide with major findings because doing so increases the credibility of the study by demonstrating that measures were taken to search for alternative ways of seeing and understanding the environment in which data were collected. Searching for rival explanations also aided theory development during data analysis because these explanations, along with mainstream explanations, offered a full description of how and why events came into being.

Discrepant Data

Discrepant data were also found that demonstrates a lack of consistency in maintaining educational policy within the district and negative aspects of the policy. Further discrepant data showed that the policy poorly fits schools that do not have more than one math teacher per grade level, and a complete lack of uniform math curriculum existed in the district prior to the math assessment policy.

Evidence supporting a lack of consistency maintaining the policy can be found in Teacher T1's statement, "I mean, I guess I didn't use the actual exit assessment, but I used ideas that it's built upon." Teacher T1 went on to say, "Well, I think there should be more clarity about it. From what I know I'm not sure anyone does an exit assessment." Teacher T1 also stated, "I never used an exit assessment as required." Teacher T2 added to this finding, "When we moved away from [the policy] I think it definitely hurt, so to speak, student achievement."

Evidence displaying negative aspects of the policy can be found in Teacher T1's statement, "The problem I see is that there are all of these overlapping assessments so I think maybe there is too many, and it would be great if we could have one thing that was integrated all together." Administrator A3 reiterated this idea, "Our state assessment, NWEA, classroom, common formative assessments...we've just got too much assessing going on."

Evidence that a lack of fit for some schools that do not have more than one math teacher per grade level was seen in Administrator A3's comments:

I think [the senior administrator] having a very high school perspective and multiple math teachers had a very clear vision of wanting to have this math be taught and the same assessment be taught to help improve math instruction and math learning overall. And it applied differently here because we had one teacher. We didn't have to do a lot of collaboration and things that I think you do if you're in a bigger school.

Finally, evidence that prior to the math assessment policy, there existed no uniform math curriculum comes from Administrator A4 who stated, “[Prior to the math assessment policy] we'd never had a strong curriculum in our district; we'd never had any uniformity in any of our classes. It was a complete free-for-all really.”

Data that differed most dramatically from the major themes identified in the previous sections came from Administrators A5, A4, and A3. Administrator A5 was the only participant to request the district limit its changes when answering the question, “What future recommendations do you have, if any, for the math assessment policy and why do you make those recommendations?” Administrator A5 stated, “I recommend that we stay with the assessments rather than jumping into something totally brand new because it looks intriguing.”

Administrator A4 pointed out the difficulties inherent in implementing the policy when asked the question, “Do you have anything to add?”

That has moved us, but I think accountability has also moved us. It wasn't a fun move, and I don't like the way the move happened, you know having to be held

dangling in front of the public “boo math teachers,” you know, “boo high school.”

It was hard; it was really hard.

Administrator A4 discussed the extent to which math educators were disconnected from the standards within the district prior to implementation of the policy when asked, “Do you have anything to add?”

I’ll never forget [a junior administrator] handed me, he just brought me a box filled with [a teacher] stuff ‘cause [a teacher] was moving to counselor, and I was taking [a teacher]’s position so he brought me this box of like lesson plans and books, and I said ‘alright.’ ‘These are the classes you’re teaching,’ and I’m like ‘what do I need to teach?’ and he’s like, uh, ‘just whatever,’ and I was like ‘really?’ I mean, it was no one ever, I mean I could have taught two chapters and no one would have known. All semester I could have done a whole semester and taught two chapters and no one would have known.

Administrator A3 discussed how the policy really didn’t fit the school where he worked:

I think [the senior administrator] having a very high school perspective and multiple math teachers had a very clear vision of wanting to have this math be taught and the same assessment be taught to help improve math instruction and math learning overall. And it applied differently here because we had one teacher; we didn’t have to do a lot of the collaborations and things that I think you do if you’re in a bigger school or in a dynamic system where you have multiple teachers teaching multiple or the same things.

Evidence of Quality

To ensure quality data collection, evidence of triangulation, peer debriefing, and member checking were used in this study (Barusch, Gringeei, & George, 2011; Cooper, Brandon, & Lindberg, 1998; Creswell, 2008; Marshall & Rossman, 2011; Nguyen, 2008; Spall, 1998). Triangulation consists of using different sources of information to increase the validity of a study (Guion, Diehl, & McDonald, 2011; Rapport et al., 2013; Spall, 1998). Triangulation was guaranteed by corroborating evidence from interviewing eight different sources. Within these eight sources, two types of information were collected: one from three teachers a second from five administrators.

Peer debriefing consists of having a trusted colleague read the researcher's analysis of the data and interpretations and check the validity of the researcher's paradigm in relation to the data analysis or call into question the way in which data were interpreted (Given, 2008; Wertz, Charmaz, & McMullen, 2011). Peer debriefing has further established triangulation by utilizing a colleague outside of the math assessment policy to investigate the method of data collection, interpretations of the researcher, and the conclusions that stemmed from data analysis. I interpreted the raw data after each interview was conducted. The peer debriefer was given interpreted data to read. After the peer debriefer read the interpreted data, he confirmed the data were plausible and credible, "This all looks good. This is an interesting study."

Finally, member checking synonymous with informant feedback and respondent or participant validation improves the accuracy, credibility, and transferability or external validity of a study (Houghton, Casey, Shaw, & Murphy, 2013; Krefting, 1991; Tracy,

2010). According to Tanggaard (2008) member checking can be done during the interview process, at the conclusion of the study, or both. Specific to this study, member checking occurred after each participant interview was transcribed. This served as the final indicator of quality. Participants were asked to validate the findings of the data analysis after transcription or correct the transcription. Participants all stated that transcriptions were reliable, accurate, and valid and did not request any changes to the transcription.

Limitations in Addressing the Problem

The evaluation of the math assessment policy in a local district in the southwest has its limitations. The limitations of the evaluation in addressing the problem include the number of participants studied. All data collected were restricted to interview data, and the theoretical frameworks used to align the study possess their own limitations. These limitations are outlined below.

Reliance on Interview Data

The initial limitation in evaluating the math assessment policy was the fact that when using interview data personal narratives introduce bias and retelling limits findings usefulness and value, hence the importance of peer debriefing and member checking. Creswell (2008) suggested that “participants misinterpreting complex questions” have led to failures in supplying the essential findings or information needed to allow for informed recommendations. Bardach (2011) also agreed that improper semantics can weaken a policy evaluation. Adams and Cox (2008) went on to state that assuming an evaluation is the answer to organizational or academic problems lessens the worth of the evaluation.

Hartley (2009) indicated that policy evaluations are not intended to be the solution of their own accord, but rather to determine the outcomes and future possible directions. Accordingly, the intent of this policy evaluation was to inform and demonstrate personal narratives to assist with suggestions for modifications of the math assessment policy.

Number of Participants

One particular limitation of this study that was pointed out to me by potential participants was that it was conducted near the end of a school year. Two potential participants declined to be part of the policy evaluation citing too many obligations during the end of the year, thus limiting the number of participants in the study. A second limitation was that participants may not have understood what the policy evaluation was seeking to understand and what kind of a commitment participating involved. In order for the policy evaluation to benefit the local district, it was important that all members have a thorough understanding of what was involved. It may have been the case that both the senior administrator and I misjudged the population involved in using the math assessment policy and, therefore, participants who did not apply to the math assessment policy may have been solicited. The next potential limitation was that of the 12 participants solicited for inclusion in the math assessment policy evaluation only eight agreed to participate. The final limitation was that many participants did not understand the difference between a program, procedure, and a policy. This misunderstanding may have also lead to the self-selected exclusion of two other participants from the data collection process.

Researcher Bias

A teacher in the same district conducting a policy evaluation may have had an unrealized effect on both the administrators and teachers who participated. To minimize this effect, teachers within the researcher's own department were avoided, which may have created a further limitation by lowering the number of potential participants. Keeping participants confidential further assisted in minimizing this limitation, but the limitation still exists.

The policy evaluation and its design are limited. The math assessment policy evaluation and the data collected were based on a small, rural district in the southwest. This evaluation may be difficult for large, urban school districts to replicate because the time of data collection would need to be expanded. There are many factors that may limit the findings to other settings. The first limitation identified during this study was the small sample size, which consisted of eight participants. The second limitation was that all participants worked in the same small rural district. The eight-person sample was adequate in providing answers to the interview and research questions. Finally, only three teachers and five administrators provided data for the math assessment policy evaluation.

Data Analysis Results

Interview data were collected from 3 K-12 math teachers and 5 administrators about the process that led to a local math assessment policy. I recorded the interviews and transcribed the recordings by hand. Documentary data from local media resources were also reviewed and are cited within the following findings.

Integral pieces of Bardach's (2008, 2011) policy analysis are the techniques for evaluating effectiveness of communication between policy makers and analysts. Policy descriptions must be written in the vernacular and clear enough that people in and out of academia will be able to understand their intent without misinterpretation or different factions of parties using the policies having wide variation in understanding of how to use the policy (National Education Policy Center, 2014). Evidence of a gap in practice was discovered when senior administration stated, "The math assessment policy has never been evaluated since its creation" (senior administrator, personal communication, 2012).

The framework for interpreting the results of this study was the evaluation of policy process. The evaluation of policy process includes both understanding policy analysis and policy process. Sabatier's (2007) five characteristics of the policy process framework were used to frame the initial stages of this study prior to data collection. Sabatier (2007) notes the five components of the policy process: agenda setting, policy formation, legitimation, implementation, and evaluation. Bardach's (2008, 2011) policy analysis framework helped to complete the evaluative process, as it provided guidelines for judging the fitness of a policy. According to Bardach, there are eight components to evaluating policy: define the problem, assemble evidence, construct alternatives, select criteria, project outcomes, confront tradeoffs, make decisions, and story-telling.

Most components of Sabatier's (2007) policy process theories and Bardach's (2011) eightfold path to policy analysis were found in the setting. However, in a few cases, components of the theoretical frameworks had to be addressed through district, community, or state documentary data because they were not revealed during qualitative

data collection. During the process of advancing the math assessment policy through data collection, analysis, and interpretation, it appears that agenda setting, policy formation, and legitimation all occurred concurrently via an authoritarian mandate from upper leadership. This authoritarian process may be seen as a marginal weakness of the policy. Teacher participants in this study expressed a belief that there may have been a lack of teacher adherence to the policy as the policy continued over time. Administrator A2 mentioned that teacher complaints at the onset of the policy were not uncommon. Conversely, a strength of the policy was increased teacher collaboration when prior to the policy, there had been very little or none at all. Some participants noted an increase in cohesiveness among similar content areas and throughout the grade levels. This policy evaluation concludes the evaluative stage of Sabatier's policy process.

Bardach's (2011) eightfold path for policy analysis can be seen in this case study narrative. During the progression of evaluating the math assessment policy, the problem was identified from the fact that the policy had never before been evaluated. Evidence was collected through interview data from three teachers and five administrators. Alternatives to the policy evaluation were considered. These included a program evaluation and longitudinal analysis. The criteria for evaluating the math assessment policy were determined through the use of three research questions involving origins, development, and results of the policy. Results of the policy demonstrated that it had met its intended goals to an extent as perceived by interview participants, an authoritarian means of transmitting the policy was used, and collaborative practices among teacher practitioners increased. Work still exists for the district regarding the math assessment

policy. The district must confront tradeoffs in terms of the policy's effect on excessive testing versus the positive collaboration provided by the policy. The local district may have to decide which of these tradeoffs is of greater importance or whether they are of equal importance. If discovered they are equally important then the tradeoff of decreased instructional time resulting from more testing will have to be accepted by district personnel. The concluding step of the eightfold path, policy evaluation, is addressed in the following section.

Findings: Case Narrative

This case study narrative examines how a school district implemented a math assessment policy to shape and inform math curriculum and instruction in order to bolster student achievement on state mandated exams. Three teachers and five administrators were interviewed to assess their experience and perceptions of implementing common assessments. Throughout the formation, implementation and execution of the policy, some problems arose, but many of the participants also expressed numerous positive aspects of the policy. The case study narrative demonstrates how the state requirements for student achievement are often at odds with the teachers' philosophies and community values.

The purpose of the case study narrative was to tell the story of the people involved in the local district's math assessment policy. Case study narratives combine two types of qualitative designs: the case study and narrative research. Cases might be people, school districts, companies, actions, or measures (Creswell, 2008; Fritz, 2008; Merriam, 2009). In this study, the case at hand was the evaluation of policy process that

led to the math assessment policy in a local southwestern school district. In order to inform stakeholders about the sentiments of participants and community members regarding the policy, the case study narrative was critical. The presence of both empirical evidence and opinions about the math assessment policy provided a holistic understanding of the policy. Case study narratives may consist of varied data including intercultural development inventories, review of archival and documentary data, observations, and interviews. This case study narrative's data was collected through participant interviews, documentary data from media outlets, and archival data from the state department of education.

The critical case narrative was chosen to uncover the why and how an event came into being (Creswell, 2008; Fritz, 2008; Holley, 2006). The evaluation of the math assessment policy process was a critical case that sought to understand how and why the math assessment policy came about and evolved over time. It also seeks to show what the results and reactions of the larger community were in response to the math assessment policy. Understanding how the policy changed chronologically may help stakeholders appreciate the processes needed to develop new policies and improve the current ones. The narrative in many studies can vary in purpose (Fritz, 2009; Heber, 2011; Yin, 2009). Those purposes may consist of constructing individual or group identities, persuade the reader, rationalize the meaning behind an argument, teach a lesson, and make sense of events. In this study the narrative offered both the perspectives of teachers and administrators regarding the math assessment policy with the intention of determining how the policy came to be, was used, and impacted teachers and principals.

There are two theoretical frameworks that are used to guide this case study narrative. The first framework was Sabatier's (2007) policy process theories. The second framework was Bardach's (2008, 2011) eightfold path that guides policy evaluation. Both frameworks were essential to the project study because in order to complete evaluation of policy process the policy must be analyzed. Furthermore, the case study narrative evaluated the process that was followed when the math assessment policy in the local district was established, implemented, developed, and how it affected the local community's attitudes toward the district. This case study narrative further filled a gap in practice in which the math assessment policy had not been evaluated prior to development of the project study.

Policy Evaluation Framework

Sabatier's (2007) stages of the policy process included agenda setting, policy formulation, policy adoption, policy implementation, and policy evaluation. The stages of the policy evaluation process and the steps to policy analysis were embedded in the above findings; and to emphasize clarity, their presence and significance were illustrated in the following sections.

Agenda Setting

According to Green-Pedersen and Walgrave (2014) agenda setting occurs when the "problem" that needs addressing is put on the formal policy agenda of issues to be addressed by organization personnel. There is no indication from the data that district personnel were convened to discuss an agenda of issues prior to the mandate that the

policy be implemented. The only agenda setting that appears to have occurred was with one isolated individual, the senior administrator in office at the time the policy began.

The district's situation in the spring of 2005 was that the previous three years (2002, 2003, and 2004) of state assessment data showed that students' state math assessment scores were on the decline. The assistant superintendent at this time saw a need to correct this problem by mandating that teachers write and administer a series of common assessments and exit assessments throughout the district K-12. These assessments would help create uniformity among grade levels in mathematics and inform the mathematics teachers of the following school years of the standards their students needed to learn. However, teachers and administrators were not unified on the common assessments. Administrator A2 indicated this lack of unity stemmed from teachers' beliefs that adding new assessments, as well as writing them, was just one more thing to add to their to do list: "many of the perceptions were this is something I have to do now."

The purpose of the mandate of the math assessment policy was to improve student achievement in mathematics based on data presented to the district by the state department of education (Walter, 2004). This was further supported by the data collected through Administrator A4. This participant was in the district when the policy was formulated and was particularly vocal in stating that numerous teachers in the same subject area could be teaching completely different content in the course of a school year. Furthermore, this participant stated that teachers were not teaching to the state standards as a whole. Lack of uniformity and failure to teach the state standards were thought to be the cause of poor state test scores. Moreover, the math assessment policy was thought to

be the tool that would create uniformity and guarantee teachers taught the state standards thereby improving state assessment results.

Six administrators and twelve math teachers were tasked with identifying the standards students needed to learn to improve their mathematics achievement and write both formative and summative assessments that matched these standards. From the onset, difficulties arose with selecting the content to use to write these assessments. Teacher T3 stated that the teachers in collaborative meetings were required to identify standards and write assessments that were aligned to textbooks rather than the state standards: “Our math assessment was created from the book we were using at the time.”

Furthermore, problems were also evident in the absence of consistency in instruction and content, a lack of adequate assessments, instruction that was not being informed, and immediate feedback. Administrator A1 stated, “They wanted that policy in place so that those kinds of teacher practices were consistent across all grade levels.” The types of practices Administrator A1 referred to were uniformity in content and instruction. This statement implies that there was a problem recognized within the district in which instructional and content consistency did not exist prior to the math assessment policy. Further, data from Administrator A1 indicates that administrators and the school board also recognized a problem in which a lack of accountability existed prior to the policy. Administrator A1 explains, “Expectations of administrators and probably the board of education supporting those expectations that we create common assessments and used exit exams.” Teacher T3 also stated, “I believe [the senior administrator] thought we

needed more data to, you know, pass on standards to the next teachers the following year.”

It was clear teachers needed data to inform their instruction. Teacher T1 suggested that teachers needed to inform their instruction: “Knowing what the kids need to know, creating a way of assessing that, and then actually assessing how they did as a way to inform, evaluate your instruction.” Administrator A3 also stated that

Part of it was just to make sure that we knew what we were doing. That the kids were really learning and growing and that we were actually able to help them be successful by the end of the year or so. I think the biggest motivation was for us to guide our instruction. The second piece was, of course, the accountability to make sure that all teachers were indeed teaching what needs to be taught.

Additionally, not having immediate feedback was an issue because teachers could not inform their instruction in a timely manner for the students they were currently teaching. Teacher T2 stated that prior to the math assessment policy, absence of immediate feedback was a problem: “We wanted to make sure we were teaching to the standards and that our kids were growing throughout the year in what they were actually taught not just our state assessments so that we could get immediate feedback.”

Administrators were also receiving pushback from the media, superintendent, and school board. Documentary evidence from local media sources also point to a concern at the district level. A 2004 newspaper from the town of the district’s locale reported that “in general, said [the senior administrator], ‘positive trends are noted in reading scores,

especially in the fourth, ninth and 10th grades. Writing scores indicate a stable trend line. But math scores,' he said, 'remain a concern for district officials'" (Walter, 2004).

Policy Formulation

The policy formulation period was a semester long period in which central office had one meeting per school with teachers to tell them that the math assessment policy needed to occur. Teachers were not given the option to opt out of the math assessment policy, and there was little discussion devoted to other options between teachers and administrators. While there seemed to be some unity in the need for common assessment, as demonstrated in the data analyzed for this study, teachers and administrators largely felt that the process of policy formation was exclusionary. By all accounts within the data collected, formulating the math assessment policy was an event that was directed through top-down management.

Teacher T3 stated, "I had no part of creating the math assessment policy." Teacher T2 said, "I didn't have anything to do with actually creating the policy, but following through with and creating the assessments that were outlined by it." Administrator A1 declared, "I don't believe I had a role creating the policy." In reference to who formulated the policy A1 asserted, "I would say from our assistant superintendent at the time, who was the director of curriculum and instruction." Teacher T1 also said they had, "none or no role" in formulating the policy. Administrator A4 declared, "I had very little involvement in creating the policy." These statements all provide evidence that the math assessment policy's agenda and formulation were set into play without many of the district's stakeholders having taken part in these two portions of the policy process.

Policy Adoption and Implementation

Participants recalled that the policy was adopted in the spring of 2005 as a directive from central office. Administrators A4 and A5 both cited a professional development event the fall of 2003 by Richard and Rebecca Dufour as being the catalyst that resulted in adoption of the math assessment policy. According to administrators A4 and A5 the assistant superintendent in charge of instruction at the time followed Dufour and Eaker's (1998) data driven models to develop the policy. The adoption process was clearly authoritative and given little discussion so participants had little recollection regarding adoption other than when it occurred and where it came from.

By contrast, participants had many recollections of how they were required to implement the math assessment policy. Many teachers and administrators expressed feelings about policy adoption and implementation that were similar to how they felt about policy formulation. They felt that they were not included in the formation process, but were expected to fully participate in implementation. Administrator A4 said, "I was employed by the district, and I was doing the assessment policy," thus indicating that A4 saw the adoption and implementation of the math assessment policy as something that they were now responsible for as an employee of the district. The problem with this was that there was no discussion about what to do and why to do it, just that it needed to be done. Data collected from all participants shows that teachers understood that student test scores needed to improve, but no discussion of whether there was an alternative to the math assessment policy was never mentioned by participants.

Other participants indicated the part they played in implementing the policy mainly involved writing and administering the assessments the policy required rather than helping to formulate the policy and what it contained. Administrator A1 declared, “We created common assessments for each unit of instruction. We also had an exit exam which was a common assessment for all students at the end of the year.” Administrators A2 averred:

We worked really hard with each team to look at creating an end of the year assessment that would help the following year’s teacher get a better sense of what type of learner and how well the student was doing with math and then we did some backwards planning from that and formative assessments to ensure that we were not using it as an autopsy but as a formative assessment to see if we needed to determine if we needed to change instruction.

Teacher T2 reiterated the same sentiment Administrator A2 had expressed, “We definitely did a backwards design. We created our common assessments which tied to the exit assessments and then did lesson planning from there, so that we knew each requirement was specifically taught.” Teacher T2 liked the math assessment policy and writing the assessments for the policy. She felt that the policy strongly informed her instruction.

Policy Evaluation

The final stage of the policy process, policy evaluation, had not preceded this study. The goals for this policy evaluation required an in-depth inquiry into reasons for the local district’s math assessment policy. Inquiry included the discovery of successes

and downsides from administrators and teachers about the math assessment policy as well as successes of the policy. This policy evaluation was relevant because no prior evaluation conducted regarding the policy had occurred prior to the onset of this study (senior administrator, personal communication, 2012). All participants expressed a belief in the efficacy of the math assessment policy. According to all interviewed participants, with the exception of Teacher T1, the policy met its outcomes in terms of improved student math achievement, improved teacher collaboration, and informed instruction. The complexity of new Common Core State Standards and the participants not being in possession of numerical state test data when interviewed makes it difficult to pinpoint to what extent these outcomes were met.

Policy Process Framework

Bardach's eightfold path for policy analysis includes defining the problem, assembling evidence, constructing alternatives, selecting the criteria, projecting outcomes, confronting tradeoffs, deciding, and telling the story. The following sections outline the path of policy analysis for the local math assessment policy.

Defining the Problem

The problem identified by the math assessment policy was lack of student achievement in math. In the spring of 2005 the local district found that state assessment data showed students' state math assessment scores were waning. The assistant superintendent at this time recognized the district could use a means of remedying this problem by issuing a directive that a series of common assessments and exit assessments be written and administered throughout the district K-12. These assessments would

generate consistency within grade levels in mathematics and apprise the following school years instructional leaders about what math standards students were lacking. Therefore, the problem was defined as improving student achievement in mathematics based on the state level data presented to the district by the State Department of Education.

Furthermore, evidence of the problem was thought to have been rooted in the absence of consistency in instruction and content, a lack of adequate assessments, absence of informed instruction, and state feedback that took an excessive amount of time to reach the district's schools. Administrator A1 stated, "They wanted that policy in place so that those kinds of teacher practices were consistent across all grade levels." This statement implied that there was a problem recognized within the district in which instructional consistency and use of state standards among teachers did not exist prior to the math assessment policy. Additional data from Administrator A1 indicated that stakeholders also recognized a problem with student math achievement being minimally evaluated or not evaluated at all: "Expectations of administrators and probably the board of education supporting those expectations that we create common assessments and used exit exams." Teacher T3 also stated, "I believe [the senior administrator] thought we needed more data to, you know, pass on standards to the next teachers the following year."

Teacher T1 suggested that prior to the math assessment policy teachers had no means of informing their instruction in order to improve instruction and target intervention: "Knowing what the kids need to know, creating a way of assessing that and

then actually assessing how they did as a way to inform, evaluate your instruction.”

Administrator A3 also stated that:

Part of it was just to make sure that we knew what we were doing. That the kids were really learning and growing and that we were actually able to help them be successful by the end of the year or so. I think the biggest motivation was for us to guide our instruction. The second piece was of course the accountability to make sure that all teachers were indeed teaching what needs to be taught.

Teacher T2 made an interesting statement about the relationship between what teachers taught and what was presented on the standardized state assessment: “We wanted to make sure we were teaching to the standards and that our kids were growing throughout the year in what they were actually taught, not just our state assessments so that we could get immediate feedback.” This implied that what was being tested on the state assessment was not necessarily what teachers were teaching in their classrooms. The lack of consistency among teachers in terms of using the standards pointed to another problem that likely affected student achievement declines in math at the time.

Assembling Evidence

Assembling evidence was part of the process of evaluating the math assessment policy. Evidence in this study was assembled in three ways. First, evidence that the policy needed to be evaluated was confirmed by the senior administrator (personal communication, 2012). Next, a literature review was conducted establishing evidence that policy evaluation was appropriate for the local educational setting. Finally, data were collected from participants, using a case study research design, regarding the math

assessment policy and its outcomes. Evidence assembled that describes the top-down nature of the policy's implementation was perhaps most striking. Teacher T3 stated, "I had no part of creating the math assessment policy." Teacher T2 said, "I didn't have anything to do with actually creating the policy, but following through with and creating the assessments that were outlined by it." Administrator A1 declared, "I don't believe I had a role creating the policy." In reference to who formulated the policy A1 asserted, "I would say from our assistant superintendent at the time who was the director of curriculum and instruction." Teacher T1 also said they had, "none or no role" in formulating the policy. Administrator A4 declared, "I had very little involvement in creating the policy." These statements all provide evidence that the math assessment policy's agenda and formulation were set into play without many of the district's stakeholders having taken part in these two portions of the policy process.

Constructing Alternatives

Alternatives to the policy evaluation that were considered were process monitoring, program evaluation, and organizational review. These alternatives were ultimately not considered because a short time frame was required for collecting data in this study, these methods do not determine the math assessment policy's effectiveness, and the wellbeing of participants was not a central focus of this study. Therefore, the criterion selected for this study, evaluation of the math assessment policy, was selected substantiating the relevance of the theoretical framework. When executing one alternative, some positive outcome could be traded for a negative outcome and vice

versa. With this in mind decisions will have to be made that determine what tradeoffs will yield the greatest benefit (Bardach, 2011; Patashnik, 2014).

The local school district had several options regarding alternatives to the math assessment policy. The first option was to maintain the status quo and continue to have teachers administer, write, revise, and analyze the data from classroom math assessment. Another option that had been offered by local community members, as illustrated by local media outlets, was to completely ignore federal and state guidelines for assessment and evaluation of public school teachers and quit assessing students altogether (Hudson, B., 2014a). This alternative could be disastrous because it would mean the district would be operating on a budget dependent solely on corporate donors. There was little evidence that the local community and business entities have the funding and interest to support a budget the size of the local district's \$11.7 million (Fincher, 2014; Hudson, B., 2014b).

A third alternative was to wait for the current political climate in education to run its course and see what new policies are mandated by state and federal governments. Finally, teachers and administrators interviewed in this study recommended the district eliminate extra testing and use only the required state mandated assessments. This was a simple idea, but confounded by the language in the current educator effectiveness bill that has been enacted by the state legislature. The educator effectiveness bill specifies that educators must have a body of assessment evidence that includes classroom assessment data.

From the data collected, it was not possible to determine whether viable alternatives to the math assessment policy were considered at or prior to the time the

policy was formulated. In fact it seems from the data collected that the district's senior administrators saw the math assessment policy as the only option to improve the district's declining test scores. Moreover, the question, "Were alternatives to the math assessment policy looked at prior to implementing the policy?" was never explicitly asked during data collection. However, had there been investigation of alternative practices other than the math assessment policy, this still may have been mentioned by participants when they were asked the following three questions during the interview process:

1. What forces were behind the policy during its inception?
2. Why was the policy created?
3. Who did the policy originate from?

The alternatives sought or the lack thereof at the time of the math assessment policy's creation cannot be ascertained within this study. Future research should be conducted in order to tease this out. However, alternatives that can be pursued in the future have been outlined herein.

Projecting Outcomes

Future policy directions were determined by analyzing policy outcomes thus far. Some participants discussed an improvement in student achievement including gaps in student achievement that had been an issue in the past. Overall, participants were fairly general about their perceptions that the math assessment policy had led to increased student achievement in math rather than citing state assessment data. Administrator A1 indicated that student achievement was positively affected:

One benefit that I see for students is that it narrowed the focus of what teachers were actually instructing on the topics, I guess you could say. And so just in doing a student would tend to be more successful instead of being taught all these scattered random acts of great things that don't necessarily relate. So, I think just by having the common assessments and the exit exams clarified narrowed the teaching focus, and that certainly would help to close learning gaps. But like I said, I can't give you stats or data on that.

State assessment data showed mixed results regarding math achievement in the local district as demonstrated through SchoolView (2015) assessment reports. Data stored in the state's archival data base showed that from 2007 to 2014 the district's elementary school performance declined with 52% of students proficient in mathematics and ended with 41% proficient. During this same period of time, the district's middle school began with 39.75% of students proficient in math and ended with 34.58%. The only school displaying achievement gains in the state archives was the district's high school beginning with 22.5% proficient in math and ending with 34.33% proficient. It should be noted that the state assessment tool and standards changed significantly from 2011 to 2014, which may have played a part in student achievement declines.

Increased teacher collaboration. Participants suggested that the policy has been the vehicle for a more collaborative culture (Garrett, 2012; Hudson, 2013; Kitagawa, 2011; Teague & Anfara, 2012; Wilhelm, 2009). This finding suggests that future continuation of the math assessment policy would continue this trend. This finding was

expressed most articulately by Administrator A1 and Teacher T2. Administrator A1 emphasized that collaboration was brought about by the policy:

I think that the common assessments become the product that pushed teachers to move in the direction that they need to move. You know, if you expect them to sit down around the table and create an assessment together, which is what we did, then we're all on the same page looking at the same standards expecting the students to know the same things working together to get that done, and a lot of teachers had to change their ways in order to be a part of that collaboration and have that product in the end.

Teacher T2 confirmed this.

I really feel like it did a good job of when we got together as a fifth grade team (because when we were using these assessments we all taught math, I wasn't the only math teacher), and so we would get together we would give a common assessment. We would enter our data into a template and then we would talk together about what we did well and see where one class in one standard did really well and where one class didn't.

Increased collaboration among teachers was one strong point of the policy that many participants pointed out during data collection. Administrator A4 discussed the environment in the local district before creation of the math assessment policy and pointed out that many teachers at the high school were teaching from different sources even when teaching the same course. Administrator A4 also revealed that the increased

collaboration that generated through the policy brought this absence of uniformity to an end.

Informed instruction. Data analysis suggested that informed instruction would likely continue in the future if the math assessment policy continues. A common practice nationwide prior to NCLB was teachers addressing only content they wanted to teach rather than all of the state standards for their particular grade level (Main, 2012; Powers, 2013). This was emphasized in the data by Administrator A1:

I believe the policy was created in order to make sure that teachers were teaching all expected standards to students and to get feedback on you know how confident I guess the students were on each of those standards. We used our exit exams more to decide on what we need to do a better job of teaching next year, then we didn't really use the exit exams as much for say placing a student or because I taught fifth grade, it was really reflecting on our practice and using it to inform our instruction. And I would say that they wanted that policy in place so that those kinds of teacher practices were consistent across all grade levels, all departments, all subjects. That kind of thing.

Administrator A3 supported Administrator A1's claims emphasizing the consistency in addressing the standards that resulted from the math assessment policy:

So, it was kind of a measure to make sure that the same math was being taught and the same level of math was being taught. So, I think it was to improve math learning and assessment procedures to make sure everyone was being taught the same thing at the same level.

The math assessment policy also resulted in consistency among teachers of the same course, as demonstrated by the findings that stemmed from Administrator A4's interview:

I think it was also we'd never had a strong curriculum in our district; we'd never had any uniformity in any of our classes. It was a complete free-for-all really. I mean algebra 2 from two different teachers, it was kind of a recognized as a district and I think as administrators and I think as teachers that we had a uniformity issue, so one that is part of that uniformity, but that idea of pushing the assessment, the exit assessment especially, from the assistant superintendent.

The district continues to see benefits with teachers informing their instruction that came from the math assessment policy, as indicated by Administrator A5:

We've tweaked it into that and you know we're using that information for, you know, and I feel like we've gotten to a better place looking at and saying we can look at it and make adjustments. You know, we've gotten away from the drilling down to every little tiny thing on the spreadsheet that was, you know. It was impossible I think to make any educational decisions looking at it that way. It was way overwhelming—too much information and there's too much there to, you know.

Confronting Tradeoffs

During qualitative data collection, participants mentioned tradeoffs that the district had not yet confronted. Additional tradeoffs that may need to be confronted by the local district were also uncovered through analysis of documentary data. Tradeoffs in policy making were widely defined as the costs incurred when a mandate was carried

forth by an organization (Andrews et al., 2013; Halpern et al., 2013; Rizvi & Lingard, 2013). The tradeoffs for implementing assessment policies in local school districts are that any assessment policy can be thought of as teaching to the test and local communities often view this as a negative aspect of public education (Bhattacharyya, Junot, & Clark, 2013; Reborá, 2012).

One example of the negative community perception regarding assessment policy in the local district was detailed in a submission to an electronic periodical that targets the local district's community members. The opinion piece author wrote that in her belief, teachers looked down on her because she had no interest in college. This perception was a result of the overemphasis her teachers gave to testing. She contended and that many students in rural communities have no interest or need for college and because of this, should not be tested to a large degree (Hudson, U., 2014). This highlights the lack of value the larger community the local district resides in sees in higher education, but more importantly, it demonstrates the frustration and lack of value the rural community has toward testing, assessment, and policies geared toward assessment.

A second article in the same periodical outlined how the complexity of numerous education policies have, in the author's opinion, made the local public schools worse not better (Hudson, B., 2014a). The only local print news source in the local district's community has similar examples of disgruntled community members' attitudes toward assessment in the district. Two articles in this publication indicated that testing in the local district was looked upon negatively and thought to be excessive by many parents and community members (Feazel, 2004; McQuiggin, 2010).

A national website, Great Schools (2015), collects anonymous data about local school districts from the public. In reviewing this site there was only one parent comment that addressed assessment or testing. This comment indicated that the local district was only interested in high test scores and students that score higher are disciplined more leniently than students that do not score well on the state assessments, “One child expelled (low scoring student) one threat ignored (high scoring student) test scores are what they strive for. 4-6 weeks of practice for the [state assessments].”

This narrative was certainly not only about community perceptions; outside of assessment, there are many community members that make overall positive comments about the local district in person; however, these comments could not be found in searches of local, state, and national media sources. In conclusion, the previous section seeks to illustrate the battle the school district finds itself in, trying to serve two masters: (1) state and federal agencies and (2) the local community.

Deciding

In the decision-making stage of Bardach’s policy analysis framework it is the job of researcher to put themselves in the shoes of the decision-makers. In this case, the decision makers are both the school board and the senior administration of the local district’s central office. This school district has many decisions to consider. As previous evidence demonstrates, the district needs to consider what decisions about future assessment policy will do to the already fractured relationship it has with the community at large while at the same time giving consideration to teachers and administrators that

value the results of the current math assessment policy and have worked hard to implement it over the past 10 years.

From the above evidence it would seem there were two basic decisions to make: (1) continue the math assessment policy in one form or another at the risk of continued alienation of the community and families at large, but with funds from state and federal entities available; (2) abandon the federal regulations and hope the at-risk local economy can pick up the tab for school funding. These decisions may place the school district in an uncomfortable position: there is much to lose in making either of these two choices.

Telling the Story

The story of the local school district in the southwest at large was one that outlines the disconnectedness of the school district and the larger community. On one end of the spectrum, the district personnel overwhelmingly see the math assessment policy as a positive advancement of the school district's students' math achievement. On the other end, there was overwhelming evidence that the policy and policies like it are not supported by numerous and vocal community members. This puts the school district in a conundrum. On the one hand, the district, in order to procure money to continue and operate, was beholden to state and federal authorities to follow assessment policy in the form of state assessments, ACT, and was also required by the teacher evaluation system to continue the math assessment policy in some form. On the other hand, the same teacher effectiveness requirements demanded schools work with the larger community to address its wants and needs. The question remains, can local school districts both serve their community members and continue to follow federal and state testing requirements?

To reconcile these opposing forces the local district may need to further study the implications of conducting two contradictory forms of business and determine whether it can be an institution of integrity.

Findings: Answers to Research Questions

The purpose of this study was to evaluate the math assessment policy of a local district in the southwest in terms of its outcomes, student achievement, and teacher and administrator perceptions of the policy. The adherence to the policy by staff, excessive testing making evaluation of all data problematic, top-down administration of the policy, consistent uniformity in math standards and teaching, evolution of the policy over time, current ownership of the policy by district teachers in order to inform their instruction, changes in standards affecting the nature and use of the policy, and the policy's relationship to a collaborative culture were all explored as themes in this evaluation. The goal was to gain an understanding about how teachers and administrators perceived the policy, whether the policy has met its goals, and whether or not the policy has improved student achievement.

Participants interviewed in this study consisted of three math teachers and five administrators. Among these participants were three middle school math educators, one of whom had taught kindergarten when the policy was implemented; two middle school administrators, two elementary principals, and one high school administrator were also included. Data were collected using semi-structured interview questions that allowed the teachers and the administrators to voice their perceptions of the math assessment policy in relation to the research and interview questions.

Interviews were analyzed to uncover eight essential findings that answered the research questions. Each finding is discussed below.

Research Question 1: What organizational context led to the creation of the math assessment policy?

- a. How was the math assessment policy implemented?
- b. What actors were involved with the implementation of the math assessment policy?

Finding 1. The first finding that addressed research question one was the assistant superintendent's top-down approach to policy adoption at the onset. This was alluded to by teacher T3 in answer to the question "what, if any, was your role in creating the math assessment policy?" Teacher T3 explains, "I had no part of creating the math assessment policy." Administrator T2 expressed this, as well, in answer to the question "do you have anything else to add?" by saying, "You know, certainly at the beginning it was very top-down. I'm not sure that it could have been anything else at that time. And so, many of the perceptions were this is something I have to do now." Administrator A3 also implied this in answer to the question, "Who did the policy originate from?" stating, "We've always been fairly collaborative as an administrative team, and so, I would say the admin team, um high school upper admin, and I don't know how much the elementary did on this can't recall." Administrator A2 also answered the same question by saying

Well, it was from, I guess it was from [the senior administrator], but it was from administration, but I mean, I think we've always had the SSAP and then we were doing NWEA, and it just drilled down from that point. I think the biggest push

was when [the senior administrator]. That's definitely NCLB going down to the state level with the state test and you know, using the NWEA has helped us really get that national norm data that we need.

The data from administrator A2 not only indicates a top-down approach from the district's administration, but also a direct cause and effect relationship between the math assessment policy and the No Child Left Behind Act of 2001.

Finding 2. The second finding was that the policy ensured teachers were teaching all of the math standards consistently throughout the district. This finding was uncovered in response to the question "Why was the policy created?" Administrator A1 stated,

I believe the policy was created in order to make sure that teachers were teaching all expected standards to students and to get feedback on, you know, how confident I guess the students were on each of those standards. We used our exit exams more to decide on what we need to do a better job of teaching next year, then we didn't really use the exit exams as much for, say, placing a student or because I taught fifth grade it was really reflecting on our practice and using it to inform our instruction. And I would say that they wanted that policy in place so that those kinds of teacher practices were consistent across all grade levels, all departments, all subjects. That kind of thing.

Administrator A3 added to this by stating in answer to the question "Why was the policy created?"

So, it was kind of a measure to make sure that the same math was being taught and the same level of math was being taught. So, I think it was to improve math

learning and assessment procedures to make sure everyone was being taught the same thing at the same level.

Administrator A4 emphasized the importance of the policy based on issues of instructional and consistency among curriculum and standards when responding to the question “Who did the policy originate from?”

I think it was also uh we’d never had a strong curriculum in our district, we’d never had any uniformity in any of our classes. It was a complete free-for-all, really. I mean Algebra 2 from two different teachers, it was kind of a recognized as a district and I think as administrators and I think as teachers, that we had a uniformity issue so one that is part of that uniformity, but that idea of pushing the assessment the exit assessment especially from the assistant superintendent.

Administrator A3 responded to the question “Why was the policy created?”

I think to improve math instruction and math learning and to make sure that we knew that was happening. So, it was kind of a measure to make sure that the same math was being taught and the same level of math was being taught. So, I think it was to improve math learning and assessment procedures to make sure everyone was being taught the same thing at the same level.

Finding 3. Finding 3 centered around evolution of the policy over time. Teacher T3 confirmed this finding in answer to the question “Why was the policy created?” saying, “the math standards have changed so much and because the math standards have changed... They’ve evolved, they’ve changed and I know that [the senior administrator]

based on the new standards has created tests to address those standards.” Administrator A5 affirmed regarding the same question,

We’ve tweaked it into that and, you know, we’re using that information for, you know. And I feel like we’ve gotten to a better place looking at and saying we can look at it and make adjustments, you know we’ve gotten away from the drilling down to every little tiny thing on the spreadsheet that was, you know. It was impossible I think to make any educational decisions looking at it that way. It was way overwhelming. Too much information and there’s too much there to you know.

Teacher T3 stated that the policy and teachers’ attitudes about it have changed dramatically since it first began:

Since it’s gone away, the couple of years that we still had five teachers, there was huge discrepancies from one classroom to another in their exit assessment kind of stuff or their state testing. So, I think it really when we moved away from doing it I think it definitely hurt, so to speak, student achievement because people were doing their own thing, we weren’t all on the same page.

Teacher T3 also stated in response to the question “Has the math assessment policy impacted student achievement?”

I’d love to say it’s affected it positively, but once again when you change the standards, we’re using different standards now. We saw a lot of improvement for a while with common assessments and now it’s kind of taken a dip again as far as our results and scores go. I would say probably just the nature of problem solving

more of the nature of the kinds of questions the kids are being asked more than just the math like facts and things like that. Just how they're retraining the kids' minds to be able to figure things out more and stick with it, and I think that's why we're seeing a little bit of a dip because the expectation is higher.

Administrator A2 responded to the same question by stating, "I do believe it has impacted student achievement, and I think that again the data is a little bit difficult to tease out because not only have we been doing a transition test to help gauge that, but we've also transitioned into whole new standards and new targets."

In response to the question "Do you have anything else to add?" Teacher T2 indicated that evolution of the policy accompanied a change in administration:

I feel like and maybe this isn't where your research is going, so I'll say it and you can take it or not. I think, you know, when [the senior administrator] came in, she was overwhelmed with it and the job that she was doing kind of changed, and I'm not saying that's a bad thing. She did some great things for our district, but as far as curriculum and asking teachers to really look at data, that wasn't her strength, and it definitely when it wasn't an emphasis coming from the admin office I think people were like, "well we don't have to do it." It's not policy. Then they didn't see it as a policy, so people have definitely quit doing it. Or it's not consistently being done say across K-12.

Teacher T2's comments point out the important aspects in interpretive theory for this policy evaluation. This teacher and the two other teachers that took part in the study showed that teachers were interpreting the use of the policy differently from

administrators. Administrators who participated in this study did not indicate in any way that there was a deviation from the policy on the part of teachers. However, teacher T2, clearly stated above that this was the case. Using thematic analysis, this indicates that there may be possible issues with communication between teachers and administrators at the local district that need to be addressed (Bastedo, 2005; Geertz, 1973; Hamman & Hopson, 2013; Humphrey, 2008; Miller, 2002).

Relationship to the literature. Finding 1 was similar to findings that Rizvi and Lingard (2011) articulated. The authors found that the sample they studied expressed fatigue with top-down policies. They also found that the globalization paradigm requires a bottom-up philosophy and procedures that may be difficult for management in the short term, but results in more institutional efficiency in the long run. Amaral, Tavares, and Santos (2013) found that the 1988 University Autonomy Act gave Portuguese universities a bottom-up policy of autonomy. Policy decisions were made using academic staff and students with democratic elections of governing bodies. A recent reform movement in Portugal's educational system replaces bottom up democracy with top-down directives. These studies illustrated the constant struggle between administrative and governing bodies authority in relation to the people that these entities serve.

Finding 2 was consistent with Main (2012) and Powers (2013), who both contended that policies surrounding the Common Core will ensure that all teachers are teaching the same content to students regardless of age. Main was concerned about this instructional rigidity because the Common Core had been seen as developmentally inappropriate particularly for elementary students. The Common Core required teaching

all students exactly the same material, regardless of whether or not a student was cognitively ready. Policies like these often overemphasized content over the emotional needs of children. Powers pointed out that, Common Core policies contained their own assessment policies embedded within them. These assessments were intended to determine whether or not the Common Core standards are being followed. Those teachers failing to adhere to the standards were required to conduct more professional development that ensures the teacher will teach Common Core standards in the future.

Finding 3 illustrated the manner in which policies can evolve for better or worse. On the negative side of policy evolution Holley (2006) outlined how increased competition to be admitted to U.S. universities caused a change in university entrance policies through applicant abuse of the policy. The abuse of the policy changed the meaning and function of the policy leading to loss of desirable candidates that, highly competitive departments could have benefitted from. Selahattin and Kevin (2001) showed that policies on economic growth change the intended outcome of the policy depending on the size of a community's technology sector. Roberge (2012) explained that policies involving school bullying have changed from a focus in paradigm on strict discipline and punishment to a focus on the way bullies interact with their peers and vice versa.

Dietz and Rogers (2012) argued for a completely different approach to policy in which policies themselves are considered experiments. Evolution of policies stems from failure of the policy which leads to a better set of procedures to reach the goals the policy intended from the beginning. The change from NCLB to Race to the Top policies may be

seen as education reform evolving in a similar way. Perhaps a better set of procedures for a new math assessment policy can be realized from the results of this evaluation.

Relationship to conceptual framework. The three findings in this section were consistent with Bardach's (2011) eightfold path in confronting tradeoffs, defining the problem, and assembling evidence. Finding 1 illustrated the tradeoffs between who was given authority to make a policy. This finding also served to illustrate the many complex layers of policy from the federal, state, to local levels of the policy. This was similar in theory to Sabatier's (2007) institutional rational choice that makes up this framework of the policy process. Institutional rational choice occurs in part when decisions about rules are made at one level of authority within a structure of rules existing at a different level. In this policy analysis one level of authority was the local school district and the fact that it was bound by state and federal rules of conduct.

Finding 2 paralleled Bardach's (2008, 2011) first component of the eightfold path, problem definition. The problem in this instance was that not all teachers were teaching content that matched the math standards before the policy was put into place. This finding also paralleled Sabatier's (2007) multiple streams framework in which agenda setting and decision making occur. Although none of the participants made direct reference to agenda setting, it can be inferred from state archival data that improvement of state assessment results was the agenda that ultimately led to the math assessment policy. These archival data were addressed in subsequent sections of this manuscript. The push and pull of the federal NCLB act and the district's failure to meet AYP in the early years of the policy may have been the catalyst for the creation of the math assessment

policy. Lack of AYP can indicate that teachers are not attending to the standards that are tested (Rotherham & Dillon, 2007).

Finally, finding 3, evolution of the policy, differed from Sabatier's (2007) innovation and diffusion models. Innovation occurred when a new policy was adopted from an outside organization. This process appeared in education reform when one state, district, or school observes that another state, district, or school has used a policy. The state, district, or school observing the policy then adopted the policy and other states, districts, or schools observing also follow suit in a domino type dynamic. Juxtaposed against this was the evolutionary nature of policy analysis. Bardach (2008, 2011) recommended that the eightfold path be repeated for policy refinement. This may have occurred with the math assessment policy, although no data collected guarantees that this was the means by which the policy changed from its original utility. However, there was solid data from respondents that the policy became something different when administration changed hands, particularly in Teacher T2's comments. This matched closely with Sabatier's (2007) social construct framework. When the district's social construct surrounding administration changed the policy began to change.

A finding embedded within finding 3 was that the policy had changed because state standards changed to the Common Core. This finding matched the literature to varying degrees (Partnership for Assessment of Readiness for College Careers, 2014; Smarter Balanced, 2014). Goldstein (2009) warned that Common Core standards were vague and had uncertain outcomes. Moreover, policy differences between educational reformers remained an issue in two ways. First, cosigners of the standards were members

of testing groups and this represented a conflict of interest. Second, standardized tests were the underlying goal of the Common Core and by its very nature discouraged creative teaching. Polikoff and Porter (2014) stated that the Common Core was the driver behind value added assessment policies, teacher quality policies, instructional alignment to the standards, and policies on instructional measures. The authors also found that surprisingly instructional alignment to students has a weak correlation. Instructional alignment and pedagogical quality were not as important to learning as policy makers emphasizing standards based reforms asserted. Educational policies have yet to be able to determine what really matters in quality instruction. Value added measures failed to detect differences in content and instructional quality (Rothman, 2014; Zancarella & Moore, 2014).

Research Question 2: How was math instruction conducted before and after the implementation of the math assessment policy?

Finding 1. The first finding regarding instruction was that the policy has been the vehicle for a more collaborative culture. This finding was expressed primarily by administrators. Administrator A1, who was a teacher when the policy began, emphasized that collaboration was brought about by the policy when responding to the question “In what ways, if any, has the math assessment policy helped teachers identify what teachers must do and change in their practice to improve student learning?”

I think that the common assessments become the product that pushed teachers to move in the direction that they need to move. You know, if you expect them to sit down around the table and create an assessment together, which is what we did,

then we're all on the same page, looking at the same standards, expecting the students to know the same things, working together to get that done, and a lot of teachers had to change their ways in order to be a part of that collaboration and have that product in the end.

Teacher T2 confirmed this when answering the question "In what ways, if any, has the math assessment policy met the goal of determining what students have learned?"

I really feel like it did a good job of when we got together as a fifth grade team (because when we were using these assessments we all taught math, I wasn't the only math teacher) and so we would get together, we would give a common assessment, we would enter our data into a template and then we would talk together about what we did well, and see where one class in one standard did really well and where one class didn't.

Teacher 3 insisted collaboration was the cornerstone of the policy when answering the same question:

We all were involved in common formative assessments. We sat down. We made the test together as a fifth grade team. Every test we would write, we would look at and then we would decide what we needed to go back and teach the next time.

In answer to the question "What future recommendations do you have, if any, for the math assessment policy and why do you make those recommendations?"

Administrator A2 emphasized the importance of the collaborative nature of the policy and its impact on instruction:

That they're reviewing data together and certainly they don't necessarily have to have inter-rater reliability as much in math as in some of the other content areas, but that collaborative scoring together and making sure that everybody is indeed on the same pace, that they're there for the problem solving when they're hitting a wall ups the ante of the level of instruction.

Finding 2. The second finding with regard to research question two was that ownership of the policy had shifted from administration to teachers wanting to know what students need to learn in order to inform their instruction. In response to the question, "In what ways, if any, has the math assessment policy met the goal of determining what students have learned?" Administrator A2 stated, "Drilling down to the classrooms all the way down to the student and how else will we know what they know? What they need help with? It guides instruction every day."

Relationship to the literature. Finding 1, policies can foster collaboration, complemented Teague and Anfara's (2012) findings that high levels of collaboration among teachers results in better performance among students. Kitagawa (2010) found that inter-organizational collaboration arrangements, rooted in Scottish educational policy, between universities at international, national, and subnational levels resulted in a pooling of initiatives that save all collaborators resources, time, and money. Sharing research facilities also resulted in greater collaboration between institutions. Garrett (2012) found that collaboration between communities and schools, embedded in school evaluation policies, help to produce a more educated workforce.

Most similar to finding 1 was Hudson's (2013) research, which found that a policy in higher education implemented to create a place-based system of family and education services for youth provided direct evidence that policies contribute to collaborative practices. The "neighborhood" policy fostered collaboration by college instruction, research, teacher training, community service, community leadership, and community grant management. Wilhelm (2009) found that school policies can critically impact whether or not collaborative cultures were fostered and maintained within schools.

The finding that top-down policies over time were owned from the bottom up, finding 2, depended on the nature of what the policy intended to address (Girdwood, 2013). Top-down demands a great deal of command and control to institute a policy. In order to succeed, a top-down policy must have clear goals, knowledge of what the result will be from the policy, a hierarchy of authority in an institution, policy aligned with the institution's rules, and a bottom rung of the hierarchy that is tapped as a resource. There were many criticisms of the top-down method of policy creation in the literature. One such criticism was that upper administration often failed to consider the full ramifications that result from the policy (Amaral, Tavares, & Santos, 2013; Spillane, Reiser, & Reimer, 2002).

A second criticism of top down implementation was that administrators often ignored the political aspects of policy creation. A lack of awareness of the policy's impact resulted in policy failure and more politicking in the organization. Policy makers may assume that statute framers were important actors in the making of the policy, when

local community members were often the most taken for granted and most important policy players. Rapid top-down institution of a policy almost always resulted in negative consequences (Easterly, 2008; Thomas & Wan-Lin, 2013; Ying Chieh, Yu-An, & Chad, 2012). This was similar to Villiers' (2011) finding that people responded to policies with undesired behavior and policies should be created based on people's motivations. This finding was explored in greater detail in the next section under Research Question 3.

Relationship to the conceptual framework. Finding 1, that the policy instituted more collaborative practices, was difficult to match up to Bardach's (2008, 2011) framework, but it loosely fit into the fifth part of the framework, "project the outcomes". From the data collected, it was apparent that many participants were in agreement that the policy did have the positive outcome of fostering collaboration among teachers. Sabatier's (2007) policy process model matched finding 1 in regard to positive social constructs. A collaborative school culture is a social construct. In the case of this policy analysis, it was vital to understand what social constructs would be successful in improving the math assessment policy.

Regarding finding 2, Bardach's (2008) framework did not specifically address top-down models of policy because it was a more generalized framework for analysis of any policy that may have been created. However, top-down policy creation was part of Bardach's analyzing the tradeoffs inherent in the agenda setting of policy. There were always tradeoffs in top-down policy creation, as shown in the next section. Often the tradeoffs were that the people associated with the bottom rung of the institution did not buy in to the policy and either did not carry it out or half-heartedly did so. Sabatier's

(2007) institutional rational choice also fit with finding 2 because it was the choice of hierarchical institutions to determine whether or not a top-down model of policy making should be instituted. In this case it was likely that at the time of the creation the administration believed the only rational means of instituting the policy was with a top-down approach. It is interesting to note that the findings stated by administrators in this study differed greatly from the literature. Findings specified by teachers showed that teachers were not using the policy and indicated a lack of buy in from faculty. As a final point, the interpretive theory framework supported the finding that administrators and teachers viewed the policy differently (Bastedo, 2005; Geertz, 1973; Hamman & Hopson, 2013; Humphrey, 2008; Miller, 2002).

Research Question 3: What are the perceived outcomes associated with the implementation of the math assessment policy, and what is the basis for the perceived outcomes?

Finding 1. Regarding research question three, it was found that not all math teachers in the district were actually using the policy. This belief was voiced by two teachers, and a third teacher said they never used the assessments that were initiated by the policy. In answer to the question “What future recommendations do you have, if any, for the math assessment policy and why do you make those recommendations?” Teacher T2 stated,

And so my recommendation would be that we still do use exit assessments and talk about them for vertical articulation to pass on, you know, like as a fifth grade teacher to the sixth grade teacher to say, “my kids did great in these areas from

the exit assessments, but in fractions they are still really limited.” To use it as a tool to pass on information from grade level to grade level. I don’t think teachers are using them in the lower grades.

Teacher T3 said in partial answer to the question “In what ways, if any, has the math assessment policy helped teachers identify what teachers must do and change in their practice to improve student learning?” “I know the math teacher right now doesn’t use the assessments as we’d created.” Finally, Teacher T2 disclosed in answer to the question “How did teachers integrate the math assessment policy into their daily instructional plans and course goals?” “Um, well, I didn’t really because I didn’t have an exit assessment. I mean, I guess I didn’t use the actual exit assessment, but I used the ideas that it’s built upon to think, you know, ‘what do kids need to know’ and what’s the best way for kids to be understanding this when they leave.”

Finding 2. The second finding, too many tests being administered all with the same goal as the math assessment policy leading to a lack of time for evaluation of all data, was expressed by both an administrator and a teacher in response to the question “What future recommendations do you have, if any, for the math assessment policy and why do you make those recommendations?” Administrator A3 stated,

We need to be smarter; we need to assess less and be smarter with the assessments that we give, and that’s the big picture, and everybody is saying that. Our state assessment, NWEA, classroom CFAs, they’re we’ve just got too much assessing going on, and we need to be smarter about, you know, using data, and I

think the student clickers helped, but to add that all up is kind of arduous, you know, a system that's a little bit.

Teacher A1 stated in response to the same question,

so the problem I see is that there are all of these overlapping assessments, so I think maybe there is too many, and it would be great if we could have one thing that was integrated all together. In fact, I think we should just get rid of TCAP and just use NWEA the whole way through, or TCAP should be broken up into three pieces like NWEA is, well, or the PARCC, or whatever we're going to be having.

Finding 3. The idea that the policy had met its intended goals to a certain degree was finding 3 in regard to research question three. Administrator A2 stated in response to the question "In what ways, if any, has the math assessment policy met the goal of determine what students have learned?" "I think it's just been critical." In response to the same question Administrator A1 affirmed, "I would say that it did meet the goal to a certain extent at least it certainly was much better than what we were doing before we had those common assessments and exit exams." Administrator A2 added to this by saying,

So, if we were to just say, oh, compared to the old standards, I think our kids would have surpassed so many skills and scores than kids in the past have because we've upped the ante in the level of instruction and have to delve in so deeply with major math concepts with the transition, it would be difficult to find great data to prove that, but I would have to say that the level of instruction and the fact

that we're meeting new standards that are much more rigorous indicates to me that it has been helping.

By contrast, in response to the question "In what ways, if any, has the math assessment policy closed the student learning gaps that existed when the policy began?" Teacher T1, in response said, "I have no idea." indicating a different awareness of the impact of the policy versus administrators. Teacher T2 responded to the question "Has the math assessment policy impacted student achievement?"

I definitely think it impacted it positively. When we had everybody teaching the same thing, it was consistent and when you've got five different, very different teachers and styles it kept us consistent; it kept us on the same page; there was a lot of fidelity with how we all taught.

Teacher T3 detailed in response to the question "In what ways, if any has the math assessment policy helped teachers identify what teachers must do and change in their practice to improve student learning?"

It was great at determining what they had learned because we would send them to [the senior administrator], and he would put this little graph together, and we would know exactly which questions and which standards we were to address and which ones the kids really didn't know.

Administrator A2 confirmed this, as well, when asked "Has the math assessment policy impacted student achievement?"

I do believe it has impacted student achievement, and I think that again, the data is a little bit difficult to tease out because not only have we been doing a transition

test to help gauge that, but we've also transitioned into whole new standards and new targets.

Administrator A3 supported Administrator A2's assertions to the same question stating, "Kids are scoring more successfully on the assessments we use." In response to the same question Administrator A4 stated, "I would say it has because I would say we've obviously made a lot of decisions based on results. You know, we've changed curriculum in our courses."

Relationship to the literature. Finding 1, that not all persons charged with carrying out a policy actually followed it, was similar in function and form to Balls, Eury, and King's findings (2011) that showed when leaders give up their own power, persons working under them often accepted their own responsibility over adherence to rules and policy. Because of the top-down nature of the policy, the teachers at the local district were not given the power that normally leads to ownership of a policy. In extreme cases, outside of the local district, NCLB assessments were cheated on by those charged to carry out the policy correctly. Desimone (2013) found this happened because NCLB removed teacher discretion and ownership.

According to Bhattacharyya, Junot, and Clark (2013) unintended consequences carried out by schools regarding NCLB included teaching to the test in order to make higher scores at the expense of critical thinking and authentic learning. Rehora (2012) studied 10,000 teachers and found most teachers did not value high stakes testing mainly because students did not take them seriously. Perhaps this was at play in the local district with teachers who decided not to follow the policy. Other researchers suggested that

novice teachers encounter more experienced teachers who instill bad habits in them, such as ignoring essential policies. When novice teachers saw there was no consequence for not following a policy, they were not motivated to follow it (Keogh, Garvis, Pendergast, & Diamond, 2012; Wallace & Irons, 2010).

When policies created more obstacles to meeting organizational goals, users questioned or defied the policy. The Robert Schuman Centre for Advanced Studies (2010) recommended eliminating these types of policies. Lack of oversight to ensure the policy was followed may have been the result of vulnerabilities inherent in the policy and not addressed by the policy (Thoumi, 2012). Wendel (2014) found that there are strategies that people use when new policies are put into place: cheat, make or change habits, or support conscious action. This can be avoided by structuring the policy to make it inviting to use, constructing an environment that supports the policy, and helping people prepare to carry out the policy. Beaver (2014) asserted that policies were often not followed by staff members because they were either not aware of them or their wording left the impression they were suggestions that could be ignored.

Finding 2, too many assessments resulted from the policy which made analyzing data overwhelming for teachers, was strongly supported in the literature. Schuster (2012) used multiple regression to examine the effects of numerous types of assessments. The author found that exit exams did little to improve students' math achievement, GPA, or dropout rates. Standards based exams were positive predictors of increased dropout rates. End of course exams correlated with a decline in math achievement, and the more at risk students were the higher their decline in math. The only students that benefitted from

these assessments were students in the top quartile. Schuster concluded that using a large variety of assessments to measure student academic growth resulted in confusing, inefficient, and ineffective quantities of data .

Amrein-Beardsley and Collins (2012) found that types of student groups can bias a teacher's ability to test well on value added assessments. Districts were using inconsistent assessment results to determine how their teachers were evaluated and which teachers were fired. In fact, teachers of higher achieving students had the most difficulty showing that they added any value to students' learning within a given school year. Papay (2010) concurred, finding that multiple assessments' variations in content, scaling, student samples, timing, and measurement error made assessment results intrinsically unstable. Senge, Cambron-McCabe, Lucas, Smith, and Dutton (2012) established that the number of assessments students took in a given year increased dramatically since the start of NCLB and continued to increase because of involvement by business leaders in funding school reform initiatives. Excessive testing limited the amount of time students spent learning and demoralized teachers endeavors to reach all students socially and emotionally (Au, 2011; Daun, 2014; Elwood, 2013; Isaacs, 2010; Santoro, 2010). Conversely, Grissom, Nicholson-Crotty, and Harrington (2014) found that assessments from NCLB had no impact in terms of overall school accountability.

Finding 3, that the math assessment policy had met its intended goals, differed greatly from findings on school reform before and including NCLB. Dworkin and Tobe (2014) discovered that one of the unintended results of NCLB was higher teacher burnout and less trust in their supervisors. Administrators that gave teachers more ownership and

decision making in school policies experienced less of an ill effect from this. Gisbond, Neill, and Schaeffer (2012) found that NCLB did not meet its intended goals, damaged educational equity between students, failed to improve student academic performance, created over testing, and failed to meet its intended goals.

Pallas (2011) demonstrated there was no student test data that showed gaps in achievement, beyond what public schools have already attained, can be closed further. Dahill-Brown and Lavery (2012) asserted that the ability of a policy to achieve its intended goals was based on the district's capacity and political will to carry out federal policy. This was determined to a great extent by the political leanings of the state the district was based in. More conservative states were more likely to administer less rigorous tests yielding outcomes that appear more closely aligned to the goals in NCLB.

Relationship to the conceptual framework. Finding 1 related to Bardach's (2008, 2011) "project the outcomes." Policy makers should admit the reality that faculty may not follow policy and make a plan in advance to address this when it arises. Finding 1's relationship to the conceptual framework was associated with Sabatier's (2007) findings on punctuated equilibrium. Punctuated equilibrium states that policies accompany periods of rapid change preceded or followed by no change. In this instance the adoption of the math assessment policy marked a time of rapid change followed by little or no change as evidenced by several years in which the policy was not revised or replaced.

Finding 2 related to Bardach's (2008, 2011) policy analysis issues when excesses are the cause of policy. These excesses often stemmed from the bureaucracy inherent in all organizations which tied with Sabatier's (2007) multiple streams framework. Policy

can both originate from multiple sources and generate multiple outcomes. The rationing of attention in this case was that a great deal of attention was devoted to testing, increasing the number of tests administered. The search for alternatives led to another instrument which increased the amount of testing. Exit assessments were used, but so were other forms of assessment during the time the policy was implemented and throughout its duration.

Finding 3 connected to Bardach's (2008, 2011) framework in which there was a danger that extrapolating from successes observed in demonstrative context and timing a policy analysis during a period that was likely to create the impression that success was inevitable. Whenever an organization's policies were met with success, Bardach recommended that concerns about high level or extremely below level results be explored and unwarranted optimism avoided before the outcomes are thoroughly tested. Simultaneously, the idea that the assessment policy had met its intended goals was present in Sabatier's (2007) framework that positive predictions about policy outcomes should be tested to the extent that policy makers are able to avoid periods of study and areas that are too convenient.

The idea that the math assessment policy had changed because the standards changed fits with the evolutionary model (Bardach 2008, 2011). A common process of change may be instigated by other policies connected to the policy under analysis. Moreover, Sabatier (2007) demonstrated that policy change can have a variety of presentations. A common way a policy may change was when the policy degenerates or goes beyond degeneration and fails. Another way policies may change was that they may

improve upon their original intent and goals. The Common Core was only two years in use by the local district. Therefore, it will take time to see whether this change in policy is positive, negative, or neutral.

The problem was that a math assessment policy had not been evaluated in the local district. By evaluating the policy process in the local district the problem was resolved. Recommendations made from this policy evaluation have the potential to create ongoing and global impact on administrators and teachers who want to improve in the area of math assessment or even assessment in general. As teachers work together to strive for excellence in education, the school setting will be able to make adjustments in the curriculum for diverse groups of students. In the next section, reflections and conclusions that were rooted in the literature were discussed in order to further support the recommendations made in this policy evaluation (Mears, 2010; Murchan et al., 2009; Polikoff & Porter, 2014).

The purpose of this study was to evaluate a local math assessment policy and describe how teachers and administrators implemented and continued a math assessment policy in a local school district. The themes identified were (a) uncertainty in the ranks, (b) sharing power, (c) collaborating among the mathematics disciplines, (d) policy evolution, and (e) policy outcomes. The peer debriefer agreed that these were common themes and stated, “This all looks good. This is an interesting study.” In the current section, I have attempted to explain these emergent themes.

Uncertainty in the ranks. Uncertainty in the ranks refers to the different perceptions teachers and administrators had regarding the math assessment policy.

Administrators in every case expressed a belief that all applicable teachers were using the policy. Conversely, in each case for the participants that were teachers, none of them expressed a belief that all teachers were currently or had in the past used the math assessment policy.

Sharing power. Sharing power relates to how teachers were accessed for their buy in with the policy. Both teachers and administrators asserted that top-down administration was used to instill the policy in the beginning. Administrators expressed a belief that teachers owned the policy and that it was no longer simply an administrative requirement.

Collaborating. Collaborating among the mathematics disciplines was associated with the fact that several participants indicated that the math assessment policy resulted in a change in practice. That change in practice was that teachers had to write assessments in a group leading to collaboration. The change in practice also related to teachers helping each other with student achievement when teachers found they were weak in a standard another teacher that was stronger in that standard could assist that teacher in improving instruction in that area.

Policy evolution. Policy evolution was connected to sharing power in that the policy started as a top-down mandate and then over time moved to teachers owning their students' assessment outcomes so that they can determine what to teach. Policy evolution was also linked to how assessments were revised, edited, and changed from the onset of the policy to present day due to changing from state standards to Common Core state standards.

Policy outcomes showed that to some extent, based on participant perceptions, the policy improved student achievement and helped to close achievement gaps. Participants expressed a belief that the policy, either in the past or currently, met the outcomes of improving student achievement. The participants also expressed that since the standards have changed, the degree to which this can be determined was complex. State level archival data showed an increase in student math achievement for some schools and a decrease in other schools.

Evidence of Quality

Participants were asked to review their transcribed data to ensure quality data collection (Barusch, Gringeei, & George, 2011; Cooper, Brandon, & Lindberg, 1998; Creswell, 2008; Marshall & Rossman, 2011; Nguyen, 2008; Spall, 1998). Next, triangulation was guaranteed by verifying evidence from interviewing eight different sources. Within these eight sources, two types of information were collected, one from 3 K-12 teachers, and a second from 5 K-12 administrators. Finally, peer debriefing further established triangulation. A colleague unfamiliar with the math assessment policy reviewed the method of data collection, interpretations of the researcher, and the conclusions that stemmed from data analysis. The peer debriefer confirmed that the data interpretations were valid and reliable. Documentation that was used to establish evidence of quality can be found in Appendices B, C, D, E, F, and G.

Outcomes

The outcome of and project for this study was a complete evaluation of the math assessment policy of a local southwestern school district. The stages of the policy process

were analyzed, and the resultant efficacy of the creation, implementation, continuation, and evaluation of the math assessment policy was explained as seen by the participants interviewed for this study. According to Sabatier (2007), the stages of the policy process included problem recognition, agenda setting, policy formulation, policy adoption, policy implementation, and policy evaluation. Problem recognition as an outcome was present in the initial stages of the math assessment policy, as central office identified a deterioration in state level math assessment data in 2004. Through the evaluation of interview data, it was discovered that the agenda that led to adoption and formulation of the math assessment policy was generated through a top-down administrative model. The outcome stemming from this part of the evaluation was for the district to consider investigating a more bottom-up model of policy creation that will help teachers buy into future policy adoptions. As demonstrated through interpretation of the narrative case study data, it was shown that a lack of buy-in may have led to some teachers ignoring the policy or dropping it as soon as it appeared to no longer be rigorously enforced. A third outcome of the policy evaluation process was the policy's strength in implementation in which teacher and administrative teams through intense collaboration created the assessments that were used to carry on the policy. The final outcome of this project was the evaluation report that explains the findings, implications, and recommendations regarding the math assessment policy.

The manner in which individual stakeholders understood the policy would not have been uncovered were it not for this policy evaluation. Individual participants' understanding of the policy was a subset of the outcomes of this project. During data

collection and analysis, it became evident that each building involved in the policy had a significantly different understanding of how the policy was to be used and its history. For example, middle school members thought the policy consisted of a series of common assessments including an exit assessment. High school members only recalled use of the exit assessments as the main part of the policy. Elementary school members primarily recalled use of the common assessments.

This discovery brings to mind the need of the local district to continuously evaluate and not take for granted how individuals understand the use and function of the policy. Gunter's (2009, 2010) power economy regimes state that policies are understood differently depending on the level of power individuals possess in an organization. Therefore, it may be possible to determine whether an individual's interpretation of the policy stemmed from their own power economy. Making these determinations could help the local school district understand paradigms that users of the math assessment policy fall into and keep track of whether or not district personnel have common understandings of the policy.

The Project Deliverable

The project that has resulted as the outcome of the preceding findings was an evaluation of the process that led to the math assessment policy in the local district (see Appendix A). The frameworks that guided the project deliverable were discussed in the preceding section under findings. The evaluation showed that there were positive aspects of the process that led to the math assessment policy at the local district. The evaluation also demonstrated that there were some complicated aspects to the policy as perceived by

local teachers and administrators. The project deliverable is discussed in more detail in the next section.

Section 3: The Project

The project that was a result of this study was an evaluation of the process that led to the math assessment policy in a local district. The deliverable that has been created through the process of collecting and analyzing qualitative data for this study is present and complete (see Appendix A). The goal of this project was to inform the local district stakeholders about the process that led to the creation, implementation, and continuation of the math assessment policy.

Project Description

The project in this study was the evaluation of the math assessment policy and its processes from the beginning of the policy until the spring of 2014. This policy evaluation was initiated in response to needs and responses within a local school district in the southwest, in which it was discovered by the superintendent that the policy had never before been evaluated (personal communication, 2012). For the project, a well-developed policy evaluation was created. To carry out this policy evaluation, a qualitative case study narrative was used to identify strengths and opportunities for improvement within the math assessment policy. The conceptual framework for the policy evaluation was based on Sabatier's (1991) five elements of better policy process and Bardach's eightfold path for better problem solving. The five elements of better policy process provide policy evaluators, which may include local districts, with a construct to which to hold current policy accountable. The eightfold path parallels and expands upon the elements of policy process, providing yet another lens that evaluators can use to assess the development and outcomes of policy. Both the five elements of better policy process

and the eightfold path to better problem solving are discussed at length in the Case Study Narrative of the Policy Process and the Possible Social Change Implications sections that can be found in succeeding pages of this study.

Project Goals

The goal of the project was to evaluate the processes used to create the math assessment policy and to determine whether the policy had accomplished its intended outcomes. In this section, the project, which was an evaluation of a local math assessment policy, is described. The study is framed by the theoretical frameworks of Sabatier's (2007) policy process theories and Bardach's (2008, 2011) eightfold path, which was the framework that assisted in evaluation of the policy.

Rationale for Selecting the Policy Evaluation Genre

The rationale for choosing this policy genre was that the recommendations from this policy evaluation would provide opportunities to inform perceptions of the math assessment policy and future policies, enhance teacher instruction, promote student achievement, and engage the local community. Teachers and administrators may go beyond traditional concepts of math assessment to a broader, more social framework of assessment if these policy recommendations are adhered to (Balthasar, 2011; Ceniviva & Farah, 2007; Patton, 2002).

The rationale for the research design of a policy process evaluation, using narrative data, was that such a design relies on the participants' experiences, the order in which parts of the policy process were instilled, and perspectives of teachers and administrators regarding the math assessment policy. Additionally, interview data, once

analyzed, allowed the categorization of the outcomes of the policy into themes. Personal narratives addressed the problem directly; participants were asked questions that helped unwrap the process involved in creating the math assessment policy. Additionally, participants responded in detail to the research questions about the math assessment and how it affected instruction and collaboration (Gubrium & Holstein, 2009; Wertz, Charmaz, & McMullen, 2011).

Literature Related to the Project

The Effect of Communication in the Policy Process

Van Leeuwen et al. (2014) indicated that effective communication is essential to the success of any policy. As the policy moves forward and new members of the organization are trained, those members must be communicated with about the policy on a regular basis. Derthick and Rotherham (2012) discussed the importance of federal policy in guiding effective communication about education reforms from the state to local levels. Conversely, Rush and Scherff (2012) demonstrated that assessment, when communicated poorly, may be interpreted at the local level as a means of humiliating teachers who fail to improve student achievement.

Karelitz, Fields, Levy, Martinez-Gudapakkam, and Jablonski (2011) asserted that policy can be interpreted broadly by both teachers and administrators, precipitating unintended consequences. Through NCLB policy, high mobility in the teaching profession was exacerbated dependent upon how districts interpreted the requirements of the law. NCLB marks an important chronological milestone in the development of education policy. Between 1972 and 2011, math curriculum became more accessible to

lower achieving students with a cost to higher achieving students, who actually saw their scores wane during that period. The current U.S. assessment policy trends in K-12 education make it difficult to motivate students to commit to STEM careers. Students' views of themselves and stereotyping also determine their choices to take math and science courses (Graham, 2011; Grey & Wichman, 2012; Vigdor, 2013).

Next, media interpretations, ratings from individuals without children in school, ratings from individuals with children in school, and hierarchical government structures affect how local policy makers understand and interpret how policies come into being (Favero & Kenneth, 2013; Heber, 2011; Roche & Wilsker, 2010; Wildavsky, 2011). State and local school boards and administrators may benefit from being mindful of this when creating school policy. Moreover, policy cannot meet its intended outcomes without an organized effort that includes effective and detailed communication measures and effective assessment and revision, as well as competent policy-making knowledge at the local level and remaining mindful of how policies affect students and communities (Gaston, 2012; Karsten & Visscher, 2010; Miruc, 2010).

Kirp (2013) and Dalton and Brand (2012a, 2012b) stressed the need to minimize the number of assessments, make them inform instruction rather than punish teachers and students, and support depth of learning and higher order thinking. Others recommend using community involvement and feedback from potential employers as a means of assessing students and supporting continuous school improvement, as well as use of multiple measures rather than high-stakes testing (Gao & Grisham-Brown, 2011; Longo, 2013; McTier & McGregor, 2011).

Successful policy making is confounded by its inherently political nature. Some have asserted that the standards movement cannot meet its intended outcomes in education for this reason and because of the skewed nature of who is considered knowledgeable about education policies (Gunter, 2010; Gunter & Forrester, 2009). Gunter broke policy making into four regimes. In the first of these, negative power, positive economy entities use their money and power to affect policy creation despite their lack of direct access to government institutions. In the second regime, positive power, positive economy individuals have direct access to public institutions and influence them by inserting private sector practices. In the third regime, positive power, negative economy stakeholders, who have no true power but have access to public institutions, engage with leadership to develop public sector services. Finally, in the fourth regime, negative power, negative economy individuals seek to develop alternative approaches to leadership within the public sector and are often critical of that leadership. Many have recommended that the policy-making process be depoliticized and involve bottom-up rather than top-down thinking so that policies truly serve those whom they were intended to serve, and so that what is worth knowing is emphasized (Bardach, 2008, 2011; Howard, Wrobel, & Nitta, 2010; McGuinn, 2012, 2014).

Looking at local policy influences, Race to the Top (RTTT) resulted in new state and local education policies that were less than systematic due to the subjective nature of its requirements. Institutional capacity and coalition building determined the recipients and results of RTTT. Grantees promised to raise student achievement and close gaps at statistically unattainable levels. All recipients have needed to postpone teacher and

administrator evaluation systems and have had inadequate time to conduct and analyze pilot studies. Data support the idea that student achievement gaps are driven by socioeconomic gaps in opportunity, and those gaps cannot be filled by any of the requirements stipulated in RTTT but must instead be met by fulfilling student social needs (Bowen, 2011; Loepp, 2013; Manna & Ryan, 2011; Noguera & Weingarten, 2010; Weiss, 2013). These opportunity gaps can be seen clearly when tracing college dropouts back to their elementary school summer education experiences (Alexander, Entwisle, & Olson, 2007). From a political standpoint, amendments at the federal level to end RTTP have been proposed because of many unfunded mandates that are currently in play (Lanham: Federal Information & News Dispatch, Inc., 2013).

State and local policies that stem from RTTT have revolved primarily around the Common Core State Standards (CCSS). There are mixed views of the CCSS. One positive view is that they emphasize rational decision making, allow for multiple entry points into standards and depth of knowledge, and emphasize personal finance (Caltabiano, 2013; Cavanagh & Klein, 2012). Conversely, early childhood educators did not participate in developing the CCSS, and an influential group of these educators has been outspoken about the developmentally inappropriate nature of the CCSS (Miller & Calsson-Paige, 2013).

All human interpretive emotions create organizational culture, behavior, and understanding. Human subconscious drives guide behavior within an organization, particularly when conflicts arise despite the conscious awareness that emotion is not a logical human trait. These human characteristics cannot be considered apart from how an

organization such as a school district perceives local policies (Shane & Glinow, 2010; Sichel, 2010). Often, the result is that the manner in which individuals understand something such as the math assessment policy varies widely among the individuals affected by it, as previously reported data suggested. One might take for granted that local organizations set agendas when making policy, but in fact, it has been shown that this is rarely the case (Lin, Lindquist, & Vedlitz, 2011; Lin, Linquist, Vedlitz, & Vincent, 2010).

Literature Saturation

Literature saturation pertaining to evaluation of the math assessment policy was reached through a Boolean search. The following search terms were used as a means to reach saturation: *education policy, policy evaluation, assessment policies, math assessment, educational reform, and educational policy*. Literature between the years 2000 and 2015 was reviewed. Relevant data were used to assist in the evaluation of the math assessment policy. ERIC, Education Research Complete, Political Science Complete, ProQuest Central, and SAGE Premier Databases were used to gather literature from peer-reviewed journals and other sources. Additional resources, including State Department of Education websites, educational websites, and textbooks, were used as appropriate.

The following recommendations were made using both Bardach's (2008, 2011) eightfold path and Sabatier's (2007) five stages to effective policy process. The most likely potential barrier to these recommendations will be the length of longitudinal analysis. A period of 10 years or more for the life span of a local education policy is

highly unusual, as illustrated in the previous literature review. NCLB started in 2001, and waivers for schools not meeting AYP began to be issued in late 2011 and early 2012 (U.S. Department of Education, 2012). Confounding variables that change the dynamics of a policy being followed through also resulted in similar dynamics with local policy. Furthermore, the policy had been in use for just under 10 years and so will not meet the requirement for longitudinal analysis until 2015. This barrier can be overcome by administrative leadership staying the course on current policies over a period of a decade, as recommended by Administrator A5.

The first recommendation for future use of the math assessment policy is that teachers and administrators gain a greater awareness of the assessment tools in use and be allowed to choose a smaller number of those tools in order to fulfill the goals of informing instruction and raising student achievement. This would further assist in determining which two assessment tools are most useful and eliminating the lesser useful assessments in order to optimize instructional time. Fewer assessment tools were identified as needed by both teachers and administrators.

The second recommendation is that research be conducted on using assessment data to evaluate teachers. Effective assessment policy should be grounded in realistic goals. Therefore, the local district needs to determine whether or not disaggregated data on student math achievement and growth provided adequate information on which to base state and local school performance measures and teacher evaluation policies. Through recently passed legislation, teachers are required to be evaluated based on student assessment data and principal observation rubrics. However, much of the

literature reviewed in the previous section demonstrates a lack of validity and reliability in assessment tools and student socioeconomic factors having a greater impact on student achievement results. Federal, state, and local policy makers should pursue further research to make an informed conclusion about whether or not evaluating teachers based on assessment data is fair and will lead to achievement gains.

The next recommendation is a district partnership with families and local business leaders as a means of authentic assessment for the district (Gao & Grisham-Brown, 2011; Longo, 2013; McTier & McGregor, 2011). This process might take the shape of a program rather than a policy, with training provided for personnel rather than just a description of procedures and steps to implementing those procedures (Anderson, 2005). The local district may want to work to nurture district-family relationships that, far from being a quick fix, offer further achievement gains over the long term (Bowen, 2011; Loepp, 2013; Manna & Ryan, 2011; Noguera & Weingarten, 2010; Weiss, 2013). Access to family and community partnerships is a potential barrier that might be overcome by direct initiative and leadership from a central office, which could involve home visits by school staff or community outreach programs.

Another potential barrier to effective policy process involves how individual stakeholders understand the policy. Consequently, to overcome this barrier, the fourth recommendation is that the local district evaluate users' understanding of the math assessment policy. During data collection and analysis, it became apparent that each case involved in the policy had a significantly different understanding of how the policy was to be used. For example, administrators thought the policy was still actively in use,

whereas teachers expressed a belief that most teachers, particularly at the elementary level, were not using it. Using Gunter's (2009, 2010) theories on power and economy regimes, it may be possible to determine which individuals have positive power/positive economy, negative power/negative economy, positive power/negative economy, or negative power/positive economy. Making these determinations would help the local district frame each individual's and school's understanding of the math assessment policy and keep track of whether or not district personnel have similar uses of the policy.

Additional research or informal investigation of a student's math progression from primary grades to secondary grades may offer a holistic view of math assessment and development within the district, especially when considering family dynamics among students that create greater growth and achievement and informing instruction beyond assessment alone. This longitudinal analysis of students could give the district a "big picture" look at the efficacy of math assessment policy over time. Longitudinal evaluation that stretches beyond a decade fits well with Sabatier's (1991) recommendations for effective policy process.

Needed Resources

The resources needed to continue the math assessment policy and improve its future outcomes include already existing assessment resources, teacher collaboration, continued refinement of assessments by teachers, community connections, and finally, personnel and time for those persons to devote to district policy evaluations on a continuous basis so that policies are improved and revised regularly. The implications of these resources are discussed in greater detail below.

First, the district's administration should consider all assessment resources currently used and determine whether it would be beneficial to eliminate certain tests in order to make more room for instructional time (Goldstein, 2009, 2011). The local district should consider editing the assessments that were created for the policy and ensuring that they meet the new CCSS. One of the strong points found through this evaluation was the policy's ability to increase teacher collaboration. This type of collaboration should continue through administration support and encouragement (Marzano, 2007, 2010; Teague & Anfara 2012).

The next resource that will be needed is a partnership with families and local business leaders as a means of authentic assessment for the district (Gao & Grisham-Brown, 2011; Longo, 2013; McTier & McGregor, 2011). This process might take the shape of a program rather than a policy, with training provided for personnel rather than just a description of procedures and steps to implementing those procedures (Anderson, 2005). The local district may want to work to nurture district-family relationships that far from a quick fix, offer over the long term further achievement gains (Bowen, 2011; Loepf, 2013; Manna & Ryan, 2011; Noguera & Weingarten, 2010; Weiss, 2013).

Finally, the district may want to further consider how district personnel understand the math assessment policy, as data collected in this study uncovered a disparity in interpretations of the policy among staff and administration. This could be further explored through the use of personnel already employed by the district who have experience with policy evaluation or are given the time to educate themselves about policy evaluation. Costs to the district could remain minimal to none through reallocating

an employee members' time. For example, employees that have partial administration positions rather than full time teaching loads could be utilized (Picus, 1999). Teacher T2 indicated that these resources currently are not being tapped into and should be addressed:

I think, you know, when [the senior administrator] came in, she was overwhelmed with it and the job that she was doing kind of changed, and I'm not saying that's a bad thing. She did some great things for our district, but as far as curriculum and asking teachers to really look at data, that wasn't her strength, and it definitely when it wasn't an emphasis coming from the admin office. I think people were like, "well, we don't have to do it. It's not policy." Then they didn't see it as a policy, so people have definitely quit doing it. Or it's not consistently being done say across K-12.

Existing Support

There are several resources already available to district teachers and administrators that are used to inform instruction. There were a myriad of assessments being used by the district. This was confirmed during data collection and included common assessments, exit assessments, Northwest Evaluation Association (NWEA) assessments, state transitional assessments, and the upcoming Partnership for Assessment of Readiness for College and Careers (PARCC) assessments. As uncovered in data collection, both teachers and administrators view the current assessment schedule within the school as excessive. As teacher T1 asserted, "The problem I see is that there are all of these overlapping assessments, so I think maybe there is too many, and it would be great

if we could have one thing that was integrated all together.” Furthermore, Administrator A3 stated,

My biggest recommendation, and this was, and I think we have tools like this now NWEA gives us information right away. We need to be smarter; we need to assess less and be smarter with the assessments that we give. And that’s the big picture. And everybody is saying that. Our state assessment, NWEA, classroom CFAs, they’re we’ve just got too much assessing going on, and we need to be smarter about, you know, using data and I think the student clickers helped but to add that all up is kind of arduous you know a system that’s a little bit.

Administrator A4 went on to say,

as far as making a recommendation to change it, we have a lot of assessments a lot of different ways we are assessing kids, and a lot of them are out of our control. You know, I wish we could use our own and you know those exit assessments obviously can become a good method to use on our MSLs [measures of student learning].

Recommendations for utilizing the already available resources involve teachers and administrators identifying the most useful two of these tools and eliminating the others in order to optimize instructional time and inform instruction in a timely fashion that minimizes the amount of data teachers have to sift through. Furthermore, accessing resources that combine both community members as assessment tools and formative assessment tools that are project based and involve optimizing instruction may increase

instructional time and higher order thinking skills (Gao & Grisham-Brown, 2011; Longo, 2013; McTier & McGregor, 2011).

Potential Barriers

The potential barriers to refining and improving the math assessment policy include the degree to which teachers are willing to actively use the current and revised policy, the degree to which teachers and administrators understand the policy in a similar sense, and the degree to which administration is willing to spend time and energy focusing on revising the policy. Teachers believed that the policy is not being adhered to by staff members, while administrators were under the impression that the policy is being followed by the district's math teachers. This discrepancy will need to be addressed in order for the policy to successfully continue and in order to make positive changes to the policy. Moreover, this demonstrated an inherent difference in the way teachers and administrators have framed their understanding of the policy. Ignoring these differences could have serious consequences for the life of the policy (Ceneviva & Farah, 2007; Chaisse & Matsushita, 2012).

Community relationships were often challenging. Therefore, gaining access to family and community partnerships might be a potential barrier that may be overcome by leadership from a central office. This could include home visits by school staff or community outreach programs. Community business leaders could also be a potential barrier to school community relationships. Business leaders have a limited amount of time in each day and often feel that time is the financial success of their business. School leaders will have to work to overcome this and convince local businesses that their

participation may result in a more skilled and prepared future pool of employees (Garrett, 2012; Hudson, 2013; McTier & McGregor, 2011).

Finally, both continuing and reforming education policy requires a considerable amount of time on the part of administration and teachers. In order for successful continuation and refinement of the policy, time will need to be allocated by both administrators and teachers (Petersen, 2009; Rizvi & Lingard, 2010; Roberge, 2012; Roche & Wilsher, 2010). In support of this Administrator A4 proclaimed, “If you really take the time and dig in and look at it which I don’t know that we’re that was ever used in that way like it could have or should have.” This indicated that prior to this study, time had not been devoted to evaluation of the policy, which should be considered by the local district for future uses of programs and policies.

Roles and Responsibilities

Teachers’ roles regarding the math assessment policy were to carry out the policy by administering common assessments in their classrooms. Teachers were further expected to use the results of the math assessments to inform and adjust their instruction and to collaborate with other teachers regarding the assessments. During evaluation of the policy, teachers explained how they experienced these roles and what they believed the outcomes of these roles were. They also explained their fidelity to the policy and what they believed other teachers adherence to the policy consisted of.

School administrators’ roles regarding the math assessment policy were to oversee math teachers’ implementation, continuation, and collaborative participation within the district. During the policy evaluation, administrators explained what they

believed the original intent of the policy was, what the outcomes of the policy continued to be, allowed access to their teachers for this study, and reported on the fidelity with which teachers continued to use the policy and maintain ownership of the policy.

District officials within the central office played a vital role in this policy evaluation by allowing access to both administrators and teachers for the study. During the policy evaluation process I served as teacher leader, data collector, and evaluator.

Project Implications

From the policy evaluation recommendations, district personnel, students, and community members, including parents, can collaborate to ensure that students see the viability of math in the greater context of their citizenry. Authentic assessment and expanded learning opportunities can be effective in improving student achievement outcomes, but teachers will not be able realize these outcomes without strong leadership implementing these recommendations (Gao & Grisham-Brown, 2011; Longo, 2013; McTier & McGregor, 2011).

The recommendations from this policy evaluation have the potential to impact all of the district's participants in holistic and positive fashion. Regarding the variety of recommendations that are geared toward meeting students' social emotional needs, the district has many avenues available to them for positive policy improvement. The teachers engaged in the policy process may benefit from relationships fostered and nurtured within the community. Furthermore, the manner in which they utilize assessment tools to inform instruction may also be useful. From a national perspective

and beyond, many of the recommendations made here correspond to and go beyond NCLB and RTTT policy and program requirements.

Social Change Implications

Social change may be accomplished through teachers, administrators, and local stakeholders taking part in an improved policy process. This policy evaluation was based on teacher and administrator understandings and perceptions of the purposes and outcomes of the math assessment policy. This policy evaluation and recommendations involved time for teachers to analyze assessment data; to collaborate with local community members, families, and business leaders; to plan and implement future assessment policy, and assess understanding through Gunter's (2010) power regime matrix.

Ensuring that recommendations originating from this policy analysis are met will require use of Sabatier's (1991) five elements of policy process. Sabatier focused on the manner in which organizational entities formulate and implement policies. Because policy theory spans all organizational and government entities, the policy process often overlooks the role of the public, communities, information on local dynamics, long term studies, and the part an individual plays in carrying out policy. Implications for this policy evaluation include positive social change that goes well beyond the math assessment policy and has a potential to greatly impact the local district. This might occur through continuing the collaborative practices that grew from the math assessment policy between K-12 math teachers and administrators. Lastly, K-12 students should be offered opportunities to increase achievement and see the relevance of what they are learning.

Based on the findings from this study, teachers and administrators at the local district saw evidence that the math assessment policy had met its intended outcomes. The participants discussed their perceptions in nine areas: (1) failure to abide by the policy, (2) analyzing data is difficult because it is excessive, (3) a top-down approach in implementing the policy, (4) consistent use of math standards needed throughout the district, (5) evolution of the policy, (6) effectiveness of the policy, (7) the policy informs instruction, (8) new standards impacting the use of the policy, and (9) collaboration as a central utility of the policy.

Most of the participants who were interviewed had utilized the math assessment policy. Participant teachers had between 5 and 10 years of teaching experience. Most administrator participants were teachers when the policy began. Most of the teachers and administrators were flexible and saw positive aspects of using the policy in district classrooms. A study participant who admitted to not using the policy still saw potential positive aspects of the policy. Administrators were the most resolute regarding the successes of the policy and also had certainty that the policy was still being used. One teacher was adamant about the successes of the policy, but urged that district leaders enforce the policy and make sure all teachers are truly using it.

Soliciting input from teachers may lead teachers to consistently follow the policy. Uniform use of the policy among math teachers may also positively impact student achievement. A district wide review of the math assessment policy may allow teachers to advance their knowledge of student learning gaps as they relate to the standards through the math assessment policy. It is imperative for the local district to have both

administrators and teachers look at the usefulness of the math assessment policy on an ongoing basis. Continuous evaluation of the policy may ensure that assessment data is useful and manageable to teachers and administrators (Bardach, 2008, 2011).

Administrators may find that smaller amounts of data are a more effective means of evaluating teachers. An effective math assessment policy allows math teachers the opportunity to analyze their own practice in order to address student learning gaps and in turn assists administrators when they evaluate instruction.

Math teachers must meet the needs of all students. The math assessment policy was a vehicle with which teachers could analyze data and see those needs. At the local level, it is important that students' academic needs are met, when these needs are met the district can move forward demonstrating academic success. Social change can be accomplished as teachers and administrators seek to ensure the efficacy of the math assessment policy on a continuous basis.

This policy evaluation and recommendation has the potential to impact the local setting. Through the project study, social change may result that benefits teachers, administrators, and students attending schools in the United States and globally. Understanding how policies are formed and optimized through effective policy process may potentially help school systems state wide, nationally, and around the world address effective policy formation.

Implications for Stakeholders

The local district may apply Sabatier's (1991) five factors for effective policy process with the goal of improving both future policy and program development

centering on assessment and informed instruction. Teachers, administrators, and students may experience greater instructional time, more efficient use of assessment resources, and greater community outreach by following the policy evaluation's recommendations. The goal of this policy evaluation was to ensure that the goals the policy had already met reach far beyond the classroom and school walls. In short, future goals may continue to be met through continuous longitudinal evaluation of the policy in factors of 10 year increments as recommended by Sabatier.

Sabatier's (1991) five factors were used to develop recommendations that focus on community outreach, understanding how policy is interpreted among teachers and administrators, math assessment policy that takes NCLB and RTTP into consideration, and more efficient analysis of assessments data. The recommendations reflected the five factors to better policy process. In these recommendations, opportunities for math teachers and administrators to collaborate about student assessment data on a regular basis may be achieved. This policy evaluation might also benefit parents, students, and teachers as they expand student learning opportunities and better focus assessment resources through district and community options. Following through with these recommendations may also lead to a stronger more collaborative community outside the school walls. Additionally, these recommendations may provide local community members with greater ownership of local youth assessment outcomes. As recommended, authentic assessment that requires students to apply their math knowledge to tasks facilitated through local business leaders will also provide opportunities for students and families to see relevance behind assessment as students take the ideas from school and

apply them to their larger community. These applications may include engineering design, medicine, economic viability of creating new local businesses, and community service projects.

Summary

From the local problem, a research-based policy evaluation was conducted. I addressed the local problem with input from administrators and teachers. The local policy evaluation was related to a larger problem that was found nation-wide regarding local implementation of NCLB and RTTT policies. Data were collected through one-on-one interviews analyzed in narrative form. After analyzing teacher and administrator perceptions of the math assessment policy, I conducted the evaluation. Finally, I made recommendations for future policy implementation and continuing the math assessment policy.

Section 4: Reflections and Conclusions

Discussion

The focus of this policy evaluation was on math assessment within a local district in the southwest. Administrators and teachers with proximity to the math assessment policy were interviewed, and these data were analyzed for themes. The aim of this evaluative study was to collect teacher and administrator perceptions of student and instructional outcomes related to the policy to determine the policy's effectiveness. The policy was seen as a success in meeting its original outcomes overall, and from one degree to another by all participants interviewed. Recommendations for making future math assessment policies even more effective and successful within the local district were explored.

As demonstrated in Section 3, there is research in the area of policy evaluation from a government, business, and educational standpoint. Researchers have identified practices within the policy process that lead to effective policy, although these are often overlooked by organizations (Sabatier, 1991). These practices align with a variety of policy and program evaluations found in numerous studies discussed in the above literature review. In this qualitative narrative case study, I inquired about administrators' and teachers' views on the local math assessment policy. I created the policy evaluation to address the efficacy of the math assessment policy in terms of its original outcomes. This policy analysis and accompanying recommendations are included (see Appendix A). In this section, the policy evaluation's strengths and limitations; recommendations for addressing the evaluation differently; policy evaluation development; leadership and

change; self-analysis; reflections; and implications, applications, and directions for future research are discussed.

Policy Evaluation

Policy evaluation is the means by which a person or group checks the effects of policies in respect to particular organizations' needs. Efficacy and validity are looked for during evaluation, and if they are not present, a means of achieving these goals is recommended. Efficacy and validity will ultimately improve an organization's planning and implementation process for the policy under investigation and future policy. The organization in this study that was in need of policy evaluation was the local district. Policies are evaluated to improve them or determine if they should be eliminated (Patton & Sawicki, 1993; Schuster, 2012; Yarrow, 2000).

Policy evaluation is conducted by first determining what the problem is. In the case of this study, the problem was that a math assessment policy had never been evaluated, representing a gap in practice. Once the policy that needs to be evaluated has been determined, the policy evaluator determines what data need to be collected in order to determine the efficiency and validity of the current policy, including accessing or creating instruments to collect data. Next, the evaluator collects the data and analyzes these data. The evaluator uncovers findings of the evaluation through data analysis. Finally, the evaluator makes recommendations to the organization regarding improvement of the policy, effectiveness of the policy, and, in some cases, whether or not eliminating the policy altogether should be considered (Balthasar, 2011; Ceniviva & Farah, 2007; Mears, 2010; Sabatier, 2007).

Political scientists often evaluate policy, but many people from a variety of backgrounds can evaluate policy. In education policy, it is not uncommon for teachers, principals, superintendents, and educational contractors to evaluate policy (Naidu, 2011; Vesely, 2012). It is not uncommon in many policy evaluation situations for government and international organizations to evaluate policy. Members or groups of members of think tanks, universities, and colleges often participate in policy evaluation as well (Mears, 2010; Murchan, Loxley, & Johnston, 2009; U.S. Department of Education, 2014).

This policy evaluation stemmed from the data collected within a local district in the southwest regarding its math assessment policy. A well-developed policy evaluation is essential to creating future effective policies and revising past policies so that they can attain effectiveness. A qualitative case study using one-on-one interviews to identify issues within the local policy was used with teacher and administrator volunteers. The theoretical framework on which the policy evaluation was based was Sabatier's (2007) theories of policy process and Bardach's (2008, 2011) eightfold path for policy analysis. The five components of the policy process provide organizations with metrics that can be used to optimize policy making. These five components are the actors, substantive policy information, the role of policy elites, incorporating longitudinal studies, and differences in political behavior across policy types.

Sabatier (2007) indicated that successful policy process is difficult, is complex, and involves many entities that compound its complexity. A key factor in the effectiveness of the policy process is considering the institution affected by the policy.

Sabatier recommended that before beginning the policy process, the following items should be considered:

1. The importance of policy communities/networks/subsystems involving actors from numerous public and private institutions and from multiple levels of government.

The importance of substantive policy information.

The critical role of policy elites vis-a-vis the general public.

The desirability of longitudinal studies of a decade or more.

Differences in political behavior across policy types.

Addressing the aforementioned steps, I have created five critical recommendations for consideration in evaluating and moving forward with the local math assessment policy. The evaluation reflects the five items recommended by Sabatier while telescoping in on the themes uncovered during data collection and analysis. Bardach warned that careful attention must be paid to semantics to avoid confusion about both alternatives and criteria for a policy. Throughout these recommendations, careful attention has been given to avoiding the confusion that can result from different understandings of criteria.

The policy evaluation consists of five considerations that could be put into play to improve the math assessment policy or future iterations thereof. These considerations consist of assessment, how to gain information from meaningful data, community partnerships, frequency of testing, and further avenues of research. Resources and the

roles and responsibilities of those involved in the recommendations that stem from the policy evaluation will be discussed.

Strengths in Addressing the Problem

This study had several strong points in addressing the local problem. First, this policy evaluation directly addressed the gap in practice of the math assessment policy in the local district never having been assessed prior to this study. It also addressed a gap in the literature, as policy evaluations for local public school districts are few and far between in academic journals. Most participants, despite the policy's shortcomings and potential future roadblocks, agreed that the policy had met its intended outcomes, teacher collaboration and raising student achievement (senior administrator, personal communication, 2010). A positive finding like this is a great strength of this study, as it is very unusual in the literature to find education reform policies that have met their intended targets (Ackley, 2011; Amrein-Beardsley & Collins, 2012; Ansary, 2010; Crews, Crews, & Burton, 2013).

A second strength is that recommendations that were made as part of the policy evaluation came from both evidence in the literature and data collected from teachers and administrators. The policy evaluation was targeted to address the concerns discussed by the district personnel interviewed for the study. Carrying out the recommendations from this study will take considerable time, particularly if the district wishes to implement longitudinal studies of the policy. These recommendations are rooted in the theoretical frameworks of this study and are research based, lending credibility and transferability to

the results (Bardach, 2008, 2011; Sabatier, 1991, 2007; Weible, Heikkila, & Sabatier, 2012).

A second strength inherent in addressing the problem of evaluating local policy is that the study required no funding whatsoever to conduct. Future policy evaluations of the math assessment policy or any district policy could be carried out by other staff members within the local district, alleviating future difficulties in evaluating policy. The local district's Gifted and Talented Coordinator or Integration Liaison, who have extended planning time of 3 to 4 hours per day, could be used for this process in future years.

A final strength is that this policy evaluation has the potential to be included as a feasible part of the district's unified improvement plan. The Math Assessment Policy Evaluation and Recommendations (see Appendix A) will be used to document the themes, findings, and recommendations that stem from evaluation of the math assessment policy. Policy evaluation involves learning, trial and error, and testing theories (Bardach, 2008, 2011; Sabatier, 2007). Stakeholders, administrators, teachers, and policy makers must contribute energy and time into addressing a policy's weaknesses and strengths. This policy evaluation supports the policy process frameworks and outlines means from the literature the local district can use to improve the policy and future policy implementations (Bastedo, 2005; Baumgartner, 2013; Dahill-Brown & Lavery, 2012; Hajer, 2003).

Limitations

All policy evaluations pose individual limitations (Flick, 2014; McMillan & Schumacher, 2014; Yin, 2014). The project that resulted from this study was not only a policy evaluation, but also an evaluation of the process by which the math assessment policy came about. The limitations that existed within the evaluation of the policy process came from the fact that the efficacy of the policy process was discovered through interview questions and that there was a small number of math teachers within the district. Qualitative interview research has inherent limitations (Anderson, 2010; Haas & Springer, 2014; Merriam, 2014). These include the fact that the researcher is present with the research participants during data collection. The presence of the researcher may influence biases during data collection and lead to participants self-censoring. Considerable effort was made to avoid bias and encourage transparent, confidential disclosure by participants during data collection, analysis, and reporting of results during the evaluation. Limitations may exist within the project that resulted from this study.

Recommendations for Addressing the Problem Differently

Understanding the perceptions and experiences of teachers and administrators and how, if at all, the math assessment policy had met its original outcomes was the focus of this policy evaluation. It is important to consider other studies that could have been conducted to solve the problem outside the scope of this evaluation of the policy process. Notably, all participants indicated that the policy was generated from a top-down leadership model. Although I sought the origin and outcomes of the math assessment policy using a narrative case study design, a means of addressing the problem differently

would be a survey using a sample larger than the eight-participant sample in this study. Creswell (2010) defined a survey study as “procedures in quantitative research in which investigators administer a survey to a sample or to the entire population to describe attitudes, opinions, behaviors, or characteristics of the population” (p. 388). In this case, if I had chosen to conduct a quantitative study, I could have used multiple data collection techniques such as cross-sectional surveys, longitudinal surveys, trend surveys, cohort surveys, and panel studies. Such research presents opportunities for examining changes in a population, changes in a subpopulation, changes in the same group of people over time, data at only one point in time, and trends in the same population over time.

The discovery of participants’ perceptions of the math assessment policy was not limited to academia. For example, three of the eight members associated the math assessment policy with noncompliance. Likewise, five of the eight participants cited a direct correlation between the policy and increased teacher collaboration. The significance of this finding is important to the educational field and represents an opportunity for administrators, faculty, and staff to clarify the current math assessment policy and ensure that they are purposeful in conveyance, adopting modifications that continue to improve the math assessment policy and make it more meaningful. Alternative ways of addressing the problem, such as a survey study or a mixed method approach with a longitudinal study, where a researcher had an opportunity to follow and survey the same math teachers’ adherence to the math assessment policy over time, could assist stakeholders and policy makers in making more meaningful policy in the future. A

survey study might be the approach necessary to discover a more complete picture of the number of teachers using or not using the math assessment policy.

Scholarship

In this study, the opportunity to evaluate a policy that I had used for a number of years was realized. As a result of addressing the local problem, this policy evaluation allowed me to formulate recommendations to solve problems related to the math assessment policy. In this policy evaluation, implications for positive social change have been discovered and methods for future policy evaluations have been explained.

From the local problem, I conducted a research-based policy evaluation. I addressed the problem with input from administrators and teachers. The evaluation of the policy process was related to a larger problem that is found nationwide regarding local implementation of NCLB and RTTT policies. I collected data by conducting one-on-one interviews, which I analyzed in narrative form. I conducted an evaluation of the local math assessment policy, having analyzed teacher and administrator perceptions. Finally, I composed recommendations for future policy implementation and continuation.

Leadership and Change

According to Merideth (2000), teacher leadership consists of risk taking, effectiveness, autonomy, collegiality, and honor. This project has affected my perspective regarding teacher leaders. Teachers have the strength to inspire and encourage others to foster change through actions such as pursuing a doctoral degree despite being the first in their family to do so. This policy evaluation may lead to improvements within the local district that benefit administrators, teachers, students, parents, and the community.

Communicating regularly with the superintendent, teachers, and administrators improved my skills as a scholar-practitioner. I was mentored and coached from the onset, and through its duration, mentors and coaches were an active part of this policy evaluation. The policy evaluation was a model for change in my district, and as a result of collaboration with local stakeholders, I discovered that minor weaknesses can often become assets to the scholar-practitioner.

Cortez-Ford (2006) pointed out that a shared vision of teacher leadership evolves from ongoing conversations with stakeholders as well as trial and error. When teacher leadership is understood in this light, the emphasis shifts away from always knowing the answer, to a problem, to responsibility to seek out and re-evaluate old assumptions and beliefs. This project study has cultivated a professional mindset in me and has allowed me to build rapport among educators within the local setting. This has invigorated integrity and added scrupulousness to the policy evaluation process. Trustworthy leaders are at the heart of successful schools. Adaptive, open-minded, and creative teachers evolve into resourceful educational explorers (Jackson, Burus, Bassett, & Roberts, 2010). Completing this policy evaluation has given me confidence as an educational leader and practitioner.

Reflection on the Importance of the Work

Evaluation of the math assessment policy was vitally important. A primary reason that the math assessment was important was that prior to this study, no formal evaluation of the policy had been conducted. This study made me keenly aware of the importance of evaluating local policies on a regular basis and avoiding policies that are strictly top-

down in nature. Had it not been for this study, decision makers in the local district would also not have known that employees of the local district using the policy saw value in the math assessment policy and that the district had achieved many of the outcomes the policy set out to fulfill.

I have completed doctoral work that will benefit not only the local district, but potentially schools globally when looking to implement successful local policies for assessing math. I have learned that each aspect of assessment policy affects the people that carry out the procedures required of the policy by reviewing literature related to assessment, policy evaluation, and perceptions about policy. I have also learned that grit and resolve are essential to conducting a policy evaluation and collecting research data. Conducting narrative case study interviews helped me to gain insight about teacher and administrator perspectives of policy and the math assessment policy in general. I evaluated a policy and made recommendations for future policy process at a local district in the southwest. Consequently, I have grown into a more effective teacher leader, scholar, and practitioner.

I believe that one of my successes as a policy evaluator was the fact that this evaluation served to fill a gap in practice at the local setting. Through this lens I was successful at balancing the positive aspects and shortcomings of the policy while avoiding bias. I paid careful attention to avoid inserting my own beliefs and feelings about the policy and was faithful to the information disclosed to me through data collection.

Self Analysis

Self as Scholar

I have developed professional knowledge that will help me to grow as a scholar of teacher leadership. I have analyzed and made changes based on my weaknesses and limitations, which have allowed me to progress in my chosen career field. Learning to conduct research and evaluate local policies helped me understand how significant research can be as part of a professional growth plan. The information I have acquired over the course of this project study as it relates to policy evaluation, along with the alternative assessment options gleaned from the literature, will broaden my horizons as a scholar. I will continue to look for ways to improve administrators' and teachers' means of assessing students in math and help to encourage effective policies that facilitate this.

As a doctoral candidate, I discovered that I can become skilled in the area of policy evaluation research. I have made advancements to my education through this study. I hope to continue my work as a researcher and scholar by helping the local district and districts beyond my region evaluate their districts' policies and processes. I have achieved an understanding of assessment types and the importance of communication in the policy process as a scholar committed to continuous improvement.

Self as Practitioner

As a high school math department chairperson and a former science teacher, I developed knowledge from this doctoral study that will help me as a career professional. I am certain that my capacity as an educator has improved. I have gained knowledge about district communication as a result of working with administrators and teachers in

this study. Through the literature review, I have acquired expertise that will be beneficial as I pursue professional opportunities in teacher methodologies and mathematics at postsecondary institutions. I have gained knowledge of concepts that illustrate not only an educational institution's need for strategic planning, but also the need to question why policies and programs are put into place. As a department chair and high school teacher, these experiences strengthened my confidence in research based decision making. I hope my ability to assist schools in effective communication will prove to be a resource for the educational community.

My doctoral studies have resulted in identifying positive outcomes that stemmed from the math assessment policy. Through educating local district personnel regarding effective assessment and policy process, I am better able to make recommendations for improving the policy beyond these positive outcomes. I am now prepared to help K-12 administrators and teachers create future policies. Community members and stakeholders may benefit from this new knowledge.

As an evolving practitioner, I grew as a lead teacher and department chair. I was involved in the decision-making process in the district as a member of the strategic planning committee. I learned about the processes used within the district to initiate programs and policies. I have had the opportunity to learn about procedures and policies in the local district. As a member of the high school's advisory committee, I also worked with administrators in coordinating resources that may help meet the social emotional needs of students. On a regular basis, I also collaborated with high school math teachers to ensure student and curricular needs were being met through facilitation of the CCSS.

Through my roles as a teacher practitioner, I have gained an understanding of the role of administrators and teachers at the elementary, middle school, and high school levels during the course of this doctoral study.

Self as Policy Evaluator/Project Developer

To analyze myself as a project developer, I must consider my role as one of policy evaluator. I applied myself to the evaluation in the manner of researcher, practitioner, scholar, reviewer of literature, and writer. As a teacher leader, I became a policy evaluator and made recommendations for better use of current and future policy. I based this policy evaluation on data gathered from five administrators and three teachers after transcribing and analyzing their interview data. In this process, I worked to review and compile relevant recommendations from peer-reviewed literature to enhance the policy evaluation. These roles guided my development as a policy evaluator and project developer.

Reflection on the Importance of the Work

This project study filled the gap in practice that was the math assessment policy lacking an evaluative process from 2005 to present day. The study was an evaluation of the math assessment policy that is the project deliverable. I learned that more than ten years is an extremely long time to go without evaluating district policies. Therefore, from what I have learned, the local district may want to consider further studies on its procedures and protocols for evaluating district policies. As mentioned in section 2 of this study, many searches of data on evaluating the math assessment policy were conducted, but none were found. When probed further within the local district, district senior

administration confirmed that the policy had not previously been evaluated (personal communication, 2012). One of many aspects that are important about this work is that the local district must strive to study this problem and improve the process for all policies and procedures including the math assessment policy. The following highlight all of the components I learned during this evaluation of policy process and components that make this work important.

First, collaboration among K-12 math teachers within the district is of vital importance. Math teachers of all grade levels not only have to ensure they are teaching the standards, but also require a measuring tool that helps them analyze students' instructional needs. Therefore, I learned it is important to continue with the collaboration that the math assessment policy formed and promoted. Part of enhancing collaboration may include pinpointing areas that collaboration has waned and improve the cooperation among those grade levels and content areas.

Secondly, there are only a small number of math teachers within the district. It could be beneficial if teachers of similar grade levels trained and collaborated with their peers on the math assessment policy. However, this approach would require multiple math teachers at every grade level. A small school district rarely has the resources to employ more than one math coach or specialist per grade level. Therefore, vertically articulating to the teachers immediately above or below a teacher's grade level particularly in small districts is of great importance. In this way, teachers could verify or correct whether or not they were meeting the needs of students at subsequent grade levels. This type of collaboration could contribute to a teacher's knowledge of gaps in

standards and inform their instruction prior to and during each school year. These teachers could also pass on their assessment data to the teachers in the grade levels above them on a consistent basis.

Finally, I learned that the district needs to consider how district personnel understand the math assessment policy. Data collected in this study uncovered a wide range of interpretations among staff and administration. It would be beneficial to the local district to develop a partnership with families and local business leaders as a means of authentic assessment for the district as their interpretations may also vary widely (Gao & Grisham-Brown, 2011; Longo, 2013; McTier & McGregor, 2011). This process could take the shape of a program rather than a policy with training provided for personnel instead of a list of procedures and steps (Anderson, 2005; Johnson, 2011). The district could also include a component that would help educate community stakeholders about how to better understand the policy (Bowen, 2011; Loepp, 2013; Manna & Ryan, 2011; Noguera & Weingarten, 2010; Weiss, 2013).

Implications, Applications, and Directions for Future Research

The outcome of this policy evaluation was positive and showed that policies created at the local level can meet their intended goals. This increased my understanding of the policy process. In order to optimize this policy evaluation in the local district, I recommend seeking authentic assessment, minimizing the number of assessments used and the data analyzed for informing instruction, as well as addressing students' social and emotional needs. Further development of the math assessment policy could also include community and local business leaders' assessment of students' math needs. The extent of

this project may be transferable to teachers and administrators in other districts, states, content areas, and grade levels that want to improve their policy process. I recommend further study to determine what assessment modalities best serve students in local districts apart from high-stakes testing.

Future researchers could conduct a mixed-methods or quantitative study researching student results and outcomes as a means to more directly assess the outcomes of the math assessment policy. Future researchers could apply a mixed-methods approach in the form of analyzing assessment and student survey data. This data could include students' perceptions of the math assessments they are required to take and the usefulness of each assessment. Data analysis could be used to support the ideas and themes identified in this policy evaluation. Qualitative studies could be used to identify when historically the policy was getting the best results and what students' perceive as the most useful instrument. Quantitative studies could include statistical methods to analyze and assess student results on all current and past assessment resources. This assessment data could be compared to state archival data. This comparison might help to pinpoint the most effective assessment in order to minimize testing and optimize student learning.

Conclusion

The results of this policy evaluation showed that the local math assessment policy's outcomes were achieved to a degree as perceived by district teachers and administrators. The policy may be further improved by carrying through the recommendations made in this project study. I conducted a qualitative study to investigate how teachers and administrators perceived the outcomes of the math

assessment policy in light of its expected student achievement outcomes and informed instruction in the local district. The final product, a policy evaluation with recommendations, provides an opportunity for the local district to see further success and improve outcomes of the policy.

Through research questions, a self-designed interview instrument, and participant interviews, this study was framed using themes within the transcribed data and the literature review. In Section 2 of the literature review, I focused on the history of federal education policies beginning with *A Nation at Risk* and ending with the NCLB Act of 2001. In Section 3 of the literature review, five factors for successful policy process as designated by Sabatier (1991) and Bardach's (2008, 2011) eightfold path were used as the framework for improvement of the current math assessment policy and better creation of future policies. I used findings about how individuals interpret and understand policy and how schools assess mathematics. Guiding questions were addressed through the theoretical framework. This policy evaluation has the potential to bring about social change through improved future policy implementation. Furthermore, the policy evaluation recommends alternative means of assessment, optimizing classroom instructional time, and targeting focused data to help drive instruction.

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Acknowledgements

I would like to thank teachers and administrators of the participating district for their eagerness to help by volunteering for this study and the willingness they displayed in being honest and forthright about their experiences with the math assessment policy.

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Background

In the spring of 2004, the former superintendent of curriculum and instruction mandated the mathematics assessment policy. The process for the policy was intended to change the way teachers planned for instruction, assessed students, and worked with other teachers. Math assessments occurred at different interims throughout the year. Teams of teachers established math assessments based on signs that effective instruction needed to be established in order to meet students' needs and strengths during grading periods. Each team was required to develop exit assessments within the last three weeks of a course. The results from the K-12 math assessments were used to determine student growth and curriculum alignment and passed on to next year's teachers as a means to direct planning for instruction.

Prior to the beginning of this evaluation of the policy process it was confirmed by the current superintendent in charge of the local district that this policy had not been evaluated for efficacy (personal communication, 2012). It is the intent of this policy evaluation to remedy the lack of evaluation of the math assessment policy.

Purpose

The purpose of evaluating the math assessment policy was to determine the quality of the stages of the policy process used by the local district. These stages include problem recognition, agenda setting, formulation, adoption, implementation, and evaluation. For this reason participants from the district were interviewed to determine the presence of the policy process stages and the quality of these stages within the math

assessment policy. Subsequent sections of this report will discuss the evaluation of these stages of the policy process.

Data Collection Methods

The methods used to conduct the evaluation of the math assessment's policy process were based on data from two groups of participants: (1) math teachers who used the assessment policy and (2) administrators who supervised the teachers using the math assessment policy. Participants volunteered to be part of the study. Those members of the district that had experience with the process used to create the math assessment policy were specifically requested to participate. This evaluation of the policy process provides the district with an opportunity to review and consider the means by which the policy may continue or end. The results offer an opportunity for members of the district to discuss current process for developing district policies.

Volunteer interviews were used to collect data that provided comprehensive descriptions of the math assessment policy process. Interviews provided an occasion to analyze two points of view: one from teachers, the other from administrators. Perceptions of the process that led to the math assessment policy were examined. Interview data provided details about how teachers and administrators experienced the policy process.

Data Analysis Summary

To evaluate the math assessment policy, three math teacher and five administrator interviews were analyzed. These perceptions included views about how problem recognition, agenda setting, policy formulation, policy adoption, and policy implementation occurred. Some interpretations from the analyses included (1) a belief

among teacher participants that during and after implementation not all teachers followed the policy; (2) years of implementation led to too many assessments, making it difficult to sift through the data and inform instruction; (3) little or no teacher input was present during problem recognition, agenda setting, policy formulation, and policy adoption; (4) administrators believed that all math teachers continue to carry out the policy implementation part of the process; (5) this evaluation of the policy process marks the first time the entire policy process has completed a full cycle.

The data demonstrated that the policy process was initiated by recognition from the superintendent's office that there was a problem in the district's state assessment data regarding a lack of achievement in mathematics. The three stages of the process that follow problem recognition, agenda setting, policy formulation, and policy adoption, were all top-down mandates involving little or no stakeholder input other than from the superintendent's office and school board requirements. Policy implementation on the other hand involved a great deal of teacher collaboration and creation of assessments in order to carry out the policy. Finally, this report concludes a full cycle of the policy process. Overall, evaluation of the policy outcomes show it has met its intended goals of improving student achievement, helping teachers inform their instruction, and creating a collaborative culture among teachers.

Intent and Application of the Math Assessment Policy.

The policy evaluation was conducted to examine the math assessment policy process and teacher and administrator perceptions of the policy process. Evaluation of the policy process forces one to consider the incompatible nature of certain competing ideals.

Often contradictory aspects of certain policies come to the forefront when aspects of the policy are questioned (Stone, 2012). Critical evaluation of the policy process supports an evaluation of intent and application of the math assessment policy. Munger (2000) stated that significant evaluation of the policy process poses questions that examine the social, political, and historical realities that define and shape the policy process in a specific context.

Relationship to Common Core State Standards.

Examining the social, political, and institutional context that impacts the part of the policy process regarding continued implementation of the math assessment policy one must consider the now required Common Core State Standards. State assessments and the nationally-normed American College Test (ACT) are both state requirements, as outlined by the 2001 No Child Left Behind (NCLB) legislation, in order for school districts to receive their allocated state and federal funding. Federal NCLB waivers were first offered by the U.S. Department of Education August 8, 2011. In the waiver requirements, schools must adhere to a rigorous teacher evaluation process where 40% or more is to be made up of student assessment scores. The local district with direction from the state has complied with these requirements and evaluated teachers using this model over the past two years, with the stipulation that negative evaluation results will be designated “hold harmless” while staff acclimates to the new evaluation model. This change was piloted without a review of historical assessment practices and the efficacy of the assessment instruments that would be used to evaluate teachers.

Evaluation of the policy process has an impact on organization that goes beyond the decisions of individuals. First, in this case, the topic of student math assessment involves a great deal of students' academic lives and well-being. Second, the policy process and the evaluation thereof involved professional and stakeholders at the district level (Earley, Inrig, & Michelli, 2011).

Summary of Evaluation and Findings

Findings Regarding the Policy Process

Problem recognition. Participants discussed a need for improved student achievement in math as a problem recognized by the superintendent's office that led to setting the agenda that brought about the math assessment policy. It was seen that the lack of math achievement was a direct result of instruction, curriculum, and assessment that was deficient in some way. Some participant statements regarding this included, "They wanted that policy in place so that those kinds of teacher practices were consistent across all grade levels." This statement implies that there was a problem recognized within the district in which instructional and content consistency did not exist prior to the math assessment policy. Further indication that stakeholders also recognized a problem in which a lack of assessment existed prior to the policy included these statements: (1) "Expectations of administrators and probably the board of education supporting those expectations that we create common assessments and used exit exams." (2) "I believe [the senior administrator] thought we needed more data to, you know, pass on standards to the next teachers the following year."

Teachers suggested that teachers needed to inform their instruction: “Knowing what the kids need to know, creating a way of assessing that and then actually assessing how they did as a way to inform, evaluate your instruction.” An administrator also stated that

Part of it was just to make sure that we knew what we were doing, that the kids were really learning and growing and that we were actually able to help them be successful by the end of the year or so. I think the biggest motivation was for us to guide our instruction. The second piece was, of course, the accountability to make sure that all teachers were indeed teaching what needs to be taught.

Participants believed immediate feedback was also a problem recognized by the superintendent’s office, “We wanted to make sure we were teaching to the standards and that our kids were growing throughout the year in what they were actually taught not just our state assessments so that we could get immediate feedback.”

Agenda setting, policy formulation, and adoption. The majority of participants indicated that the agenda, formulation, and adoption of the policy were all instigated through top-down mandates from the superintendent’s office with little or no teacher input solicited. Both teacher and administrator participants stated, (1) “I had no part of creating the math assessment policy.” (2) “I didn’t have anything to do with actually creating the policy, but following through with and creating the assessments that were outlined by it.” (3) “I don’t believe I had a role creating the policy.” In reference to who formulated the policy on administrator asserted, “I would say from our assistant superintendent at the time who was the director of curriculum and instruction.” These

statements all provide evidence that the math assessment policy's agenda, formulation, and adoption were set into play without many of the district's stakeholders having taken part in these parts of the policy process.

Policy implementation. Policy implementation was discussed as being the most involved with teacher input as its main component. It was found that teachers played a considerable role in the creation, continued implementation, and policy revision through writing and rewriting the common, formative, and exit assessments that were the significant elements making up the math assessment policy. Participants indicated the part they played in implementing the policy mainly involved writing and administering the assessments the policy required. Administrator A2 commented that the nature of implementation included writing the math assessments: "We created common assessments for each unit of instruction. We also had an exit exam which was a common assessment for all students at the end of the year." Teacher T2 added that a great deal of work went into creating the assessments in order to be compliant with the policy.

We worked really hard with each team to look at creating an end of the year assessment that would help the following year's teacher get a better sense of what type of learner and how well the student was doing with math and then we did some backwards planning from that and formative assessments to ensure that we were not using it as an autopsy but as a formative assessment to see if we needed to determine if we needed to change instruction.

Teachers reiterated the same sentiment administrators had expressed, "We definitely did a backwards design. We created our common assessments, which tied to the exit

assessments and then did lesson planning from there, so that we knew each requirement was specifically taught.” It is important to not these findings all point to the implementation phase of the policy process as involving the most input and participation from those outside of the superintendent’s office. This type of input leads to more stakeholder buy-in and ownership of a policy (Bardach, 2011).

Evaluating Policy Outcomes

Evaluating the policy outcomes is the final stage in the policy process (Sabatier, 2007). The following sections discuss whether or not the math assessment policy met its original outcomes. This section completes the final stage and a full cycle of the math assessment policy’s policy process.

Improved student achievement.

Some participants discussed an improvement in student achievement including gaps in student achievement that had been an issue in the past. Overall, participants were fairly general about their perceptions that the math assessment policy had led to increased student achievement in math rather than citing state assessment data. Administrator A1 indicated that student achievement was positively affected by saying,

One benefit that I see for students is that it narrowed the focus of what teachers were actually instructing on the topics, I guess you could say. And so just in doing, a student would tend to be more successful instead of being taught all these scattered random acts of great things that don’t necessarily relate. So, I think just by having the common assessments and the exit exams clarified and narrowed the teaching focus and that certainly would help to close learning gaps. But like I

said, I can't give you stats or data on that.

Increased teacher collaboration.

Participants suggested that the policy has been the vehicle for a more collaborative culture (Garrett, 2012; Hudson, 2013; Kitagawa & Lightowler, 2013; Teague & Anfara, 2012; Wilhelm, 2009). This finding was expressed most articulately by Administrator A1 and Teacher T2. Administrator A1 emphasized that collaboration was brought about by the policy:

I think that the common assessments become the product that pushed teachers to move in the direction that they need to move. You know, if you expect them to sit down around the table and create an assessment together, which is what we did, then we're all on the same page, looking at the same standards, expecting the students to know the same things, working together to get that done, and a lot of teachers had to change their ways in order to be a part of that collaboration and have that product in the end.

Teacher T2 confirmed this:

I really feel like it did a good job of when we got together as a fifth grade team (because when we were using these assessments we all taught math, I wasn't the only math teacher), and so we would get together we would give a common assessment, we would enter our data into a template and then we would talk together about what we did well and see where one class in one standard did really well and where one class didn't.

Increased collaboration among teachers is one strong point of the policy that many participants pointed out during data collection. Administrator A4 discussed the environment in the local district before creation of the math assessment policy and pointed out that many teachers at the high school were teaching from different sources even when teaching the same course. Administrator A4 also revealed that the increased collaboration that was generated through the policy brought this type of lack of uniformity to an end.

Informed instruction.

Informed instruction accompanied the math assessment policy as teachers and administrators continued to implement it. Teachers began teaching all of the math standards rather than just the standards they wanted to teach which, was a common practice nationwide prior to NCLB (Main, 2012; Powers, 2013). This is emphasized in the data by Administrator A1:

I believe the policy was created in order to make sure that teachers were teaching all expected standards to students and to get feedback on, you know, how confident I guess the students were on each of those standards. We used our exit exams more to decide on what we need to do a better job of teaching next year then we didn't really use the exit exams as much for, say, placing a student or because I taught fifth grade, it was really reflecting on our practice and using it to inform our instruction. And I would say that they wanted that policy in place so that those kinds of teacher practices were consistent across all grade levels, all departments, all subjects. That kind of thing.

Administrator A3 supported Administrator A1's claims emphasizing the consistency in addressing the standards that was generated from the math assessment policy:

So, it was kind of a measure to make sure that the same math was being taught and the same level of math was being taught. So I think it was to improve math learning and assessment procedures to make sure everyone was being taught the same thing at the same level.

The math assessment policy also resulted in consistency among teachers of the same course, as demonstrated by the findings that stemmed from Administrator A4's interview:

I think it was also uh we'd never had a strong curriculum in our district, we'd never had any uniformity in any of our classes. It was a complete free-for-all, really. I mean Algebra 2 from two different teachers; it was kind of a recognized as a district and I think as administrators and I think as teachers that we had a uniformity issue, so one that is part of that uniformity, but that idea of pushing the assessment, the exit assessment, especially from the assistant superintendent.

The district continues to see benefits with teachers informing their instruction that came from the math assessment policy as indicated by Administrator A5:

We've tweaked it into that and, you know, we're using that information for, you know. And I feel like we've gotten to a better place looking at and saying we can look at it and make adjustments, you know, we've gotten away from the drilling down to every little tiny thing on the spreadsheet that was, you know. It was impossible, I think, to make any educational decisions looking at it that way. It

was way overwhelming. Too much information and there's too much there, to you know.

Social Change Recommendations

Include more teacher input.

Data collected and analyzed points to a top-down administrative model at the onset of the policy process. In support of this assertion, administrators said they did not believe that they had taken part in forming the policy. Furthermore, teachers stated they had no role in creating the policy. Teachers did say they helped to implement the policy. The strongest aspect of the policy is the bottom-up implementation of the policy process. The data herein reveals that the district should reconsider using a top-down model when conducting policy process and rather investigate more bottom-up models that will help district teachers buy into current and future policies. Furthermore, data shows that this lack of buy-in may have led to some teachers ignoring the policy altogether, as indicated by teachers who claimed they had not used the policy and that when administration changed hands, teachers stopped following the policy in many instances.

Involve more stakeholders.

Throughout data collection and analysis, it was found that several participants had not played a part in the initial processes that led to the math assessment policy. It is critical to involve a wide variety of stakeholders in the policy process from beginning to end. It is difficult to gain buy-in from those charged to follow the policy without their input. Involving only a handful of administrators and a few teachers is detrimental to staff and overall school morale (Amaral, Taveres, & Santos, 2013; Lingard, 2011). The local

district must consider how policies are put into place in this regard in order for the district to be a place of high morale and productivity.

Bardach's and Sabatier's Policy Evaluation Research

Bardach's (2011) eightfold path for policy analysis consists of the following procedures: define the problem, assemble evidence, construct alternative, select criteria, project outcomes, confront tradeoffs, decide, and create a narrative of the process. During the process of analyzing the math assessment policy, the problem was identified as a gap in practice in which the math assessment policy had never before been evaluated.

Evidence was assembled through collecting interview data from three teachers and five administrators. Alternatives to evaluating the math assessment policy were considered, including program evaluation and longitudinal analysis, both of which exceeded the time frame and purpose of this evaluation. The criteria selected in order to evaluate the math assessment policy were determined through the use of three research questions involving creation, evolution, and outcomes of the policy. Outcomes of this project showed that the math assessment policy met its intended goals of increasing student mathematics achievement as perceived by interview participants. A top-down model of mandating the policy was another perception participants had when asked about the origins of the policy. Finally, participants believed that collaboration increase as a result of the policy.

Remaining work exists for the district in terms of confronting tradeoffs for continuing the policy. These tradeoffs may include the use of too many assessment programs, teacher collaboration, or cutting into instructional time to achieve both. Terminating the policy could possibly result in a decrease in collaboration among

teachers, but decrease the amount of testing teachers and students are responsible for thereby increasing instructional time. The local district will have to make a determination about which of these tradeoffs is of greatest importance. Making this determination involves the portions of Bardach's eightfold path concerning decision making and confronting tradeoffs. This policy evaluation report concludes the steps within the eightfold path as it includes analysis of the stories participants provided during data collection.

Sabatier's (2007) research on the policy process identified these five stages: agenda setting, policy formation, legitimation, implementation, and evaluation. Agenda setting consists of identifying the problem and developing a need for the policy. Policy formulation occurs when the policy is outlined and developed. Legitimation occurs when leadership of an organization approves a policy decision or program. Implementation occurs when those charged with implementing the policy carry out the policy, as outlined by the organization. Finally, evaluation occurs when the district analyzes the policy for effectiveness, relevance, and goal attainment.

During the process of developing the math assessment policy it became apparent through analysis of participants interviews that agenda setting, policy formation, and legitimation all occurred at the same time by means of a top-down administrative mandate. This top-down process can be seen as a moderate weakness of the policy, as teacher participants interviewed for this evaluation expressed a belief that there may have been a lack of teacher buy-in and accountability to the policy as time progressed. Administrators also mentioned that teachers complained about the policy as they were

implementing it. This may have resulted from a lack of initial buy-in from teachers. On the other hand, it was found that a significant strength of the policy was its ability to increase teacher collaboration as it was implemented. Prior to the onset of the policy, it was found that teacher collaboration was either nonexistent or minimal. Some participants also noted that standardization of math topics among grade levels and similar math content areas increased under the math assessment policy.

The final step, evaluation is completed by means of this report. In terms of efficacy, relevance, and outcomes it has been expressed by all of the participants that to some extent the policy has met its intended outcomes of increasing student math achievement. It should be noted, however, that participants expressed an uncertainty as to how to express this finding with hard data. This is due to the fact that participants cited the new Common Core State Standards as being dramatically different from previous state standards. State assessments are currently testing different standards as compared to the previous state assessments making academic growth in math difficult to tease out. Teacher participants also noted that important aspects of the policy such as teacher collaboration and the assessments' ability to inform instruction as aspects that continue to be relevant. Administrator participants supported this assertion.

Summary

To be effective, policy process evaluations must be evidenced based and continually reviewed (Birkland, 2012). The math assessment policy process though not entirely apparent at first glance displays attributes of this. Teachers have reviewed the assessments and adapted them so that they match current standards. The district can

improve on this process by adding an annual evaluative process to the use of current assessments. As part of the teacher evaluation components, administrators and teachers can reflect on changes in assessment that would make them more relevant and useful to students.

This evaluation can guide social change at the federal level as assessment requirements for public schools grow and change. The math assessment policy is an example of local policies that derive out of NCLB, as discussed by administrators. These policies impact the amount of time spent on instruction and the way time is used for instruction in U.S. public schools. This evaluation advances the promise that exists in K-12 public education for policy evaluations and the importance of developing theoretical frameworks that parallel relevant research on all levels of policy process theory (Sabatier, 2007). Educational institutions such as local County Public Schools have the opportunity to develop a meaningful and consistent math assessment policy and ensure district personnel are accountable to it.

Recommendations

Recommendation 1

The first recommendation is to consider minimizing the number of assessment tools used by district teachers. During future use of the math assessment policy teachers and administrators should gain a greater awareness of the assessment tools in use and be allowed to choose a smaller number of those tools in order to fulfill the goals of informing instruction and raising student achievement. This would further assist in determining which two assessment tools are most useful and eliminating the lesser useful

assessments to optimize instructional time. All teachers and administrators expressed the need for fewer assessments throughout the school year.

Recommendation 2

The second recommendation is to consider the socio-economic factors that students possess and how these affect math assessment data and the teachers evaluated by this data. The local district should consider future research on using assessment data to evaluate teachers. Effective assessment policy should be grounded in realistic goals. Therefore, the local district needs to determine whether or not disaggregated data on student math achievement and growth provides adequate information on which to base state and local school performance measures and teacher evaluation policies. Through recently passed legislature teachers are required to be evaluated based on student assessment data and principal observation rubrics. However, much of the literature reviewed in the previous section demonstrates a lack of validity and reliability in assessment tools and student socio-economic factors having a greater determination on student achievement results. Therefore, federal, state, and local policy makers should pursue further research to make an informed conclusion about whether or not evaluating teachers based on assessment data is even fair and will lead to achievement gains.

Recommendation 3

The third recommendation is to consider all assessment resources currently used in the district and determine whether they can be used in a more authentic way by utilizing community resources. The district needs to further consider how district personnel understand the math assessment policy as data collected in this study

uncovered a disparity in interpretations among staff and administration of the policy. The local district should develop a partnership with families and local business leaders as a means of authentic assessment for the district (Gao, & Grisham-Brown, 2011; Longo, 2013; McTier, & McGregor, 2011). This process could take the shape of a program rather than a policy with training provided for personnel rather than just a description of procedures and steps to implementing those procedures (Anderson, 2005). The local district may want to work to nurture district-family relationships that far from a quick fix, offer over the long term further achievement gains (Bowen, 2011; Loepp, 2013; Manna, & Ryan, 2011; Noguera & Weingarten, 2010; Weiss, 2013). Gaining access to family and community partnerships might be a potential barrier that could be overcome perhaps by direct initiative and leadership from central office which could include home visits by school staff or community outreach programs.

Policy Process Evaluated

The stages of the policy process that occurred during the implementation and continuation of the math assessment policy included problem recognition, agenda setting, policy formulation, policy adoption, policy implementation, and finally policy evaluation. Problem recognition occurred when the superintendent's office identified a lag and decline in math assessment scores through state level data in 2004. The agenda for policy adoption and formulation of the math assessment policy was generated from a top-down administrative model as supported by data collected in this study. The district should reconsider using a top-down model for agenda setting and rather investigate more bottom-up models that will help district teachers buy into the policy. As shown in the

data this lack of buy-in may have led to some teachers ignoring the policy altogether. The strength of the policy is that it was implemented by a bottom-up process using administrator and teacher teams as shown by the qualitative data outlined above. Finally, this report concludes the policy evaluation part of the process.

Lessons Learned

Another potential barrier to effective policy process is how individual stakeholders understand the policy. Consequently, to overcome this barrier, the fourth recommendation is that the local district constantly evaluates users' understanding of the math assessment policy. During data collection and analysis it became apparent that each building involved in the policy had a significantly different understanding of how the policy was to be used. For example, middle school members thought the policy was restricted to exit assessments; whereas, the high school members believed it consisted of a series of common assessments including an exit assessment. Using Forrester and Gunter's (2009, 2010) theories on power and economy regimes it may be possible to determine which individuals have positive power/positive economy, negative power/negative economy, positive power/negative economy, or negative power/positive economy. Making these determinations would help the local district frame each individual's and school's understanding of the math assessment policy and keep track of whether or not district personnel have similar understandings of the policy.

Finally, additional research on how student math assessment results progress from primary grades through secondary grades should also be considered in future policy process that involves assessment. Additional research or informal investigation of a

student's math progression from primary grades to secondary grades may offer a holistic view of math assessment and development within the district especially when considering family dynamics among students that create greater growth and achievement and informing instruction beyond assessment alone. This longitudinal analysis of students could give the district a big picture look at the efficacy of math assessment policy over time. Longitudinal evaluation that stretches beyond a decade fits well with Sabatier's (1991) recommendations for effective policy process.

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Appendix B: Interview Protocol: K-12 Teachers

Interview Protocol for K-12 Teachers

Project: An Evaluation of Math Assessment Policy Process in a Southwestern School District

Time of Interview:

Date:

Place:

Interviewer: Alicia O'Brien

Interviewee:

Pseudonym:

Position of Interviewee:

Thank you for agreeing to be interviewed today. As a review of the consent form you signed I would like to remind you that the purpose of this study is to analyze the math assessment policy in terms of meeting its original outcomes, its impact on math instruction, and teacher and administrator perceptions of the policy and its impact on student achievement. K-12 math teachers involved and administrators will be interviewed for this study. Any information you provide will be kept confidential. The researcher will not use your personal information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in the study reports. Data will be kept secure under a pass-code, locked in a secure location, and interview recordings will be destroyed within 60 days after the interview is conducted. Data will be kept for a period of at least 5 years, as required by the university. This interview will take no longer than 60 to 90 minutes to complete. This introduction serves to reaffirm your informed consent.

Questions:

1. What, if any, was your role in creating the math assessment policy?
2. What forces were behind the policy during its inception?
3. Why was the policy created?
4. Who did the policy originate from?
5. How did you integrate the math assessment policy into your daily instructional plans and course goals?
6. In what ways, if any, has the math assessment policy met the goal of determining what students have learned?
7. In what ways, if any, has the math assessment policy helped teachers identify

what teachers must do and change in their practice to improve student learning?

8. In what ways, if any, has the math assessment policy closed the student learning gaps that existed when the policy began?
9. Has the math assessment policy impacted student achievement?
 - a. If so, how?
 - b. If not, why not?
10. What future recommendations do you have, if any, for the math assessment policy and why do you make those recommendations?
11. Do you have anything to add?

Appendix C: Interview Protocol: Administrators

Interview Protocol for Administrators

Project: An Evaluation of Math Assessment Policy Process in a Southwestern School District

Time of Interview:

Date:

Place:

Interviewer: Alicia O'Brien

Interviewee:

Pseudonym:

Position of Interviewee:

Thank you for agreeing to be interviewed today. As a review of the consent form you signed I would like to remind you that the purpose of this study is to analyze the math assessment policy in terms of meeting its original outcomes, its impact on math instruction, and teacher and administrator perceptions of the policy and its impact on student achievement. K-12 math teachers involved and administrators will be interviewed for this study. Any information you provide will be kept confidential. The researcher will not use your personal information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in the study reports. Data will be kept secure under a pass-code, locked in a secure location, and interview recordings will be destroyed within 60 days after the interview is conducted. Data will be kept for a period of at least 5 years, as required by the university. This interview will take no longer than 60 to 90 minutes to complete. This introduction serves to reaffirm your informed consent.

1. What, if any, was your role in creating the math assessment policy?
2. What forces were behind the policy during its inception?
3. Why was the policy created?
4. Who did the policy originate from?
5. How did teachers integrate the math assessment policy into their daily instructional plans and course goals?
6. In what ways, if any, has the math assessment policy met the goal of determining what students have learned?
7. In what ways, if any, has the math assessment policy helped teachers identify

what teachers must do and change in their practice to improve student learning?

8. In what ways, if any, has the math assessment policy closed the student learning gaps that existed when the policy began?
9. Has the math assessment policy impacted student achievement?
 - a. If so, how?
 - b. If not, why not?
10. What future recommendations do you have, if any, for the math assessment policy and why do you make those recommendations?
11. Do you have anything to add?

Appendix D: Template Demonstrating Alignment of Research Questions With Interview

Protocol

Research Question	Possible Interview Questions	Potential Data Sources
<p>What organizational context led to the creation of the math assessment policy?</p> <p>How was the math assessment policy implemented?</p>	<ol style="list-style-type: none"> 1. What, if any, was your role in creating the math assessment policy? 2. What forces were behind the policy during its inception? 	<ul style="list-style-type: none"> ▪ For questions 1 and 2 the data sources are the school principals, assistant principals, and K-12 math teachers.
<p>How was math instruction conducted before and after the implementation of the math assessment policy?</p>	<ol style="list-style-type: none"> 1. How did teachers implement the math assessment policy into your daily instructional plans and course goals? 	<ul style="list-style-type: none"> ▪ For questions 1 the data sources are K-12 math teachers. ▪ For question 2 the data sources are K-12 administrators.
<p>What are the perceived outcomes associated with the implementation of the math assessment policy and what is the basis for the perceived outcomes?</p>	<ol style="list-style-type: none"> 1. Has the math assessment policy met its intended goals? 2. In what ways, if any, has the math assessment policy identified gaps in student learning? 3. In what ways, if any, has the math assessment policy helped teachers identify what teachers must do and change in their 	<ul style="list-style-type: none"> ▪ For questions 1, 2, 3, 4, 5, 6, and 7 the data sources are the school principals, assistant principals, and K-12 math teachers.

Research Question	Possible Interview Questions	Potential Data Sources
	<p>practice to improve student learning?</p> <p>4. In what ways, if any, has the math assessment policy closed the student learning gaps that existed when the policy began?</p> <p>5. Has the math assessment policy impacted student achievement?</p> <p>a. If so, how?</p> <p>b. If not, why not?</p> <p>6. What future recommendations do you have, if any, for the math assessment policy and why do you make those recommendations?</p> <p>7. Do you have anything to add?</p>	