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IMPROVING OUTCOMES ASSESSMENT THROUGH SILO INTEGRATION

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IMPROVING OUTCOMES ASSESSMENT THROUGH SILO INTEGRATION

by

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Dedication

I dedicate this dissertation work to my children, Ethan and Charlotte. Whatever paths or endeavors you may set out upon, do so with passion, and remember to always bring with you the courage to try and the persistence to succeed.

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Abstract

Jeffrey Scott Harmon
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The purpose of this action research study was to leverage the experiences and perceptions of academic administrators at Mountain State University to disrupt the negative aspects of silo-based decision-making within closing the loop assessment practices. Siloed operations naturally begin to operate in contradiction to one another and often to the detriment of the organization. Focusing specifically on siloed operations across academic schools at Mountain State University, this study reveals issues of inefficiency and redundancy, and develops intervention strategies in an effort to improve closing the loop assessment efforts. These strategies include structural changes leading to a more integrated assessment model calling for greater attention around the use of assessment results. Implications for siloed assessment practices in academic settings are discussed.

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Chapter 1

Introduction

American higher education today finds itself operating within a new paradigm of increased pressure toward transparency and accountability (Brown, 2017). Rising educational costs, questions relative to the inherent and applied value of post-secondary education, and waxing ethical scandals serve as some of the rationale for the increased attention on institutional accountability (Blumentstyk, 2015; Carey, 2015).

Accountability is not a new concept for American institutions of higher education. The first regional accrediting agencies were formed in the 1800's in an effort to govern, through systematic evaluation and peer review, the direction and operation of American Educational institutions and continue to do so to this day. Regulatory creep has occurred, however, with layers of regulation and compliance requirements compounding one on top of the other. In response American institutions of higher education have developed equally layered and complex systems designed to facilitate compliance (Brown, 2017; Thornton & Ocasio, 2008). One resulting effect of evolving systematic regulatory response is the compartmentalization of American higher education institutions into accountability units. (Banta et al., 1996). Brown (2017) entitles these units "specialized silos" (p. 42) citing seven distinct silos: assessment, accreditation, institutional research, institutional effectiveness, educational evaluation, educational measurement, and higher education public policy. Brown postulates that the existence of seven distinct accountability silos demonstrates a dearth of interconnected engagement or linkages between and among silos in addition to, at times, conflicting terminology and direction. In addition, these disparate silos tend to produce the data needed to satisfy the multiple

masters with overlapping redundancies and often in contradiction with one another (Brown, 2017). Brown (2017) further expanded and clarified this notion by stating the following:

> The compounded impact of decades of expanded accountability policies and measures is that universities annually collect multiple types of data at multiple levels in the organization to satisfy multiple regulatory agencies. (p. 41)

Recognizing the myriad masters of American higher education, namely those proffered by the institutional logics model, and the more granular understanding of the three social institutions that have guided the evolution of the seven accountability silos within American higher education institutions, is paramount relative to the framework used in the study below.

Background

Brown (2017) asserts that higher education functions with seven distinct accountability silos in operation; assessment, accreditation, institutional effectiveness, educational evaluation, institutions research, educational measurement and higher education public policy. These accountability silos operate independent of one another and often in contradiction (Brown, 2017). Brown (2017) further postulates that in order for higher education to experience long-term success, integration of these silos is required. "Given that limited engagement occurs across the disparate silos, higher education possesses a complex system of accountability that warrants further clarity (Brown, 2017, p.46)." Brown lays out the mission of his own research theorizing, "future accountability efforts must integrate by examining the knowledge domains of other accountability silos in order to successfully navigate the changing environment of

higher education" (p. 42). Here, Brown calls for silo integration, and redundancy reduction, among the seven-accountability silo's he has identified that comprise the accountability response engine of today's American higher education institutions. The problem inherent to higher education, as cited by Brown, is a lack of integration which leads to a host of institutional inefficiencies and sub-optimal performance. These issues resulting from a lack of integration will be more fully reviewed in Chapter 2. Brown furthers his argument by identifying what is lacking in today's higher education institutions as being not accountability in general, but rather accountability redundancy, i.e., overlapping accountability response systems, thus resulting in wasted resources, a sentiment furthered by Graham et al. "Higher education does not lack accountability. Rather it lacks enough of the proper kind, and is burdened with too much of an unproductive kind" (Graham et al., 1995, p. 7).

This study expands upon Brown's silo model by examining one of the seven accountability silos (Brown, 2017), assessment, in detail. Through application of the institutional logics model (Brown, 2017; Thornton & Ocasio, 2008) it is possible that further compartmentalization of the assessment accountability silo has occurred manifesting, potentially, as organizational silos within Brown's assessment silo context. The resulting structure may be seen today at Mountain State University, i.e., individual academic Schools operating as silos within the assessment accountability silo (Brown, 2017). In this extrapolated multiple-micro-silo model, assessment efforts would be carried out; assessment data would be reviewed and analyzed, and ultimately operationalized for curricular and co-curricular (Brown, 2017) improvement, within the individual academic school in which the program being assessed resides. The problem, as

is the case with Brown's seven accountability silo model, is that inter-school linkages do not appear to exist, i.e., academic schools are not privy to the processes of planning, implementing, and analyzing assessment data from other schools (Banta & Blaich, 2011). In addition, one of the most challenging assessment processes, that of closing the loop, (Banta & Blaich, 2011; Ewell, 2001) remains not only siloed but also opaque relative to institutional improvement in student learning. Brown supports the theory that each of the seven accountability silos operate disparately due to the multiple, and varied, unique pressures also known as institutional logics (Brown, 2017; Thornton & Ocasio, 2008) forming them. Applying the institutional logic model (Brown, 2017; Thornton & Ocasio, 2008) to the more granular strata of academic school, i.e., silos within the larger assessment accountability silo. The differences between academic schools appear to persist as a result of their own social institution matrix, which include: enrollment (market), programmatic or specialized accreditation (profession) and compliance with institutional policy (state).

Just as Brown's (2017) seven silos typically appear within the construct of a single organization, academic schools, likened to silos, are seen as parts of the larger organizational unit of Academic Affairs. The name typically applied to this division is Academic Affairs as is the case at Mountain State University. In this we may see deficiency and redundancy similarities akin to Brown's analogy of seven accountability silos within a single educational institution but applied to multiple academic schools as they form a single academic affairs division. Brown argues that integration between and among silos is critical for long-term success. I support Brown's hypothesis and offer the idea that it also applies to the disparate organizational structures that comprise each of the

seven accountability silos with specific focus on the assessment silo, i.e. that each academic school must consider both knowledge and processes (Brown, 2017) of other academic schools, relative to assessment operations in order to experience long-term success.

Narrowing the scope further, this study focused exclusively on the assessment process used by each academic school as common or disparate when compared to the other academic schools in the same institutions. Walvoord (2010) stated, "The end of assessment is action" (p. 4). Action, when taken alone, may not represent the evolution of needs with respect to higher education's assessment efforts. Today, collaborative and transparent action provides more value-add than action alone (Walvoord, 2010). Schoepp and Benson (2016) support this notion in stating, "effective closing of the loop should be a collaborative process in which faculty members use data on student learning to drive programmatic improvements" (p. 288). Further assertion of the need for this study stemmed from research conducted by Blaich and Wise in 2011. This study, entitled the Wabash National Study, observed 17,000 students at 49 different institutions, found that 60% of institutions effectively communicated assessment results to their respective stakeholders and of those only 25% had engaged in any meaningful action (Schoepp & Benson, 2016, p. 290).

Thornton and Ocasio (2008) asserted that one area of potential future research exists around the topic of institutional logics and may contain the examination of the more granular foundations of organizational evolution (p. 120). Thornton and Ocasio explain that institutional logic research is "inherently cross-level, highlighting the interplay between individual, organizations and institutions [social]" (p. 120). Within this

study, the individual academic school represents Thornton & Ocasio's granular foundation. Additionally, and for the purposes of this study, I have focused the efforts of the professional assessment community on programmatic-specific assessment data, i.e., assessment data generated for a particular set of program learning outcomes, which exist within a specific school e.g., the School of Business and Management. While assessment is a broad topic, focusing on program-specific assessment data helped to uncover and sharpen the borders of each individual academic school's operational silos.

At Mountain State University, the most common form of program-specific assessment data is the result of rubric-score artifacts for program assessment. As such this will serve as the assessment content focus of this study. At Mountain State University, each degree program carries with it an assessment cycle that stipulates when a rubric-data collection period will commence. Within that process, signature artifacts are extracted from completed courses and non-instructional raters score those artifacts against program learning outcome-aligned rubrics. The resulting data evidences student achievement, relative to program learning outcomes and is returned to the academic school in which the assessed degree program resides. Data analyses and ultimately decisions for curricular or co-curricular change are made by the academic school operating as a silo. These decisions are implemented over the course of the next several months and at times years, depending on how significant a change the decision represents. This entire process occurs without a clear linkage to, or awareness by, any other academic school. The veracity of this is, itself, something that I have describe within the context of this study as it serves as a focal point and catalyst of my research.

Some division-level (academic affairs level) administrators are apprised of these

processes, but again dissemination of the process or outcomes thereof is limited. The strata of academic school, division and ultimately institution are clearly apparent here and in alignment with Brown's (2017) silo model. Data tend to follow these strata as well (Banta, 1996) in that nationally benchmarked assessment data are analyzed and operationalized at the division/institution level whilst programmatic assessment data are analyzed and operationalized within each academic school.

Silos within higher education are visible everywhere (Brown, 2017). In looking at the world of higher education accreditation, arguably the most relevant regulatory strata American higher education institutions acknowledge, we perceive the existence of silos. In 1984, the Southern Association of Colleges and Schools (SACS) one of the six regional accrediting agencies recognized by the United States Secretary of Education, introduce standards requiring higher education institutions to demonstrate their effectiveness (Gaston, 2018). This was the first whisper of the shift from an input-driven process, e.g., number of books on the shelves of the campus library, to that of examining outputs, e.g., graduation rates, job placement rates, student achievement data, etc. This action also gave rise to the assessment movement in higher education (Gaston, 2018), which persists today. Each of the six regional accreditors have their own unique standards, policies and procedures, and due process when evaluating the effectiveness of a higher education institution within their geographic domain. Brown (2017) and Gaston (2018) both argue that even at this macro level, those unique standards et al., evolved due to a litany of environmental pressures and forged six regional accreditation agencies that, at times, act as silos. This process may occur not only at this macro level but intra-institutionally and for potentially similar reasons. Gaston lobbies for "…greater

cooperation among regional accreditors…" (p. 8) as a way to create higher levels of transparency relative to the effectiveness evaluation process in American higher education. Gaston cites three examples of how such cooperation between the six regional accreditors has begun, specifically with consensus around accreditation action nomenclature (p. 8), competency-based evaluation practices, and the "importance of clear student learning outcomes" (p. 8). The need for integration, the integration process itself, and the resulting efficiencies gained by integration of the six regional accreditation silos outlines why silo integration, at both macro and micro levels, inter and intra-institutionally, should be researched. In addition, I believe that one must consider the negative attributes of integration in conjunction with any research in this area.

Silo-based structures, including those assessment-related structures, come at a cost to colleges and universities (Andrade, 2011; Wilcock, 2013). These costs, which will be thoroughly explored in Chapter 2, may be mitigated or reduced through integration of collaborative-based structure (Ndoye & Parker, 2010). Integration is not a concept that can exist on its own, however. Integration requires human interaction and human collaboration through some type of organized structure. A blending of operational structures offered by Dufour and Eaker (1998), Kekahio and Baker (2013) and Dowd and Tong (2007), leveraging attributes of each that specifically address issues related to assessment data, will be used to frame the human effort needed within this study.

Problem Statement

Embedded within higher education institutions are silo's (Brown, 2017; Andrade, 2011; Wilcock, 2013). These compartmentalized operations, and their origins, can be described through institutional logics which suggests that institutions organize

themselves as a set of material practices and symbolic constructions in response to external, often regulatory, pressures (Brown, 2017; Friedland & Alford, 1991). According to institutional logics (Brown, 2017; Andrade, 2011; Wilcock, 2013), these siloed operations naturally begin to operate in contradiction to one another and often to the detriment of the organization through increased inefficiency. Focusing specifically on the siloed operations across academic schools at Mountain State University, this study reveals issues of inefficiency and redundancy resulting from siloed assessment operations and addresses resulting problems related to assessment and the use of assessment-related data. Both Brown (2017) and Graham et al. (1995) theorize that elimination of inefficiencies, including redundant operations, will free up resources and serve as an accelerant toward organizational sustainability.

As party of this action research study, I used five criteria (Craig, 2009) to help me establish a researchable problem inside Mountain State University and to establish a relative sense of urgency. Figure 1 visually represents how the issue of silo vs. systemic assessment data analysis processes overlays Craig's (2009) matrix and demonstrates the need and viability of research.

Figure 1

Assessment Data Analysis Structure Research Project Necessity Aligned with Dorothy Craig's (2009) Problem Identification Matrix

Criterion	Immediate Action	Hold	Ignore
Interest	**High ✓**	Medium	Low
Explanation	**Easily Identified ✓**	Moderately Explainable	Hard to Explain
Impact	**Great Potential ✓**	Some Potential	Little to No Potential
Resources	None Required	**Some Required ✓**	Many Required
Existing Goals	**Already Related ✓**	Somewhat Related	Little to No Relationship

The criteria used by Craig (2009), seen in Figure 1, allowed for an assessment of my proposed study and revealed that immediate action was both warranted and realistic.

Purpose Statement

The purpose of this action research study was to use the experiences and perceptions (Stringer, 2007) of academic administrators at Mountain State University to disrupt the negative aspects of silo-based decision-making within the closing of the loop (Banta & Blaich, 2011; Ewell, 2001) assessment process.

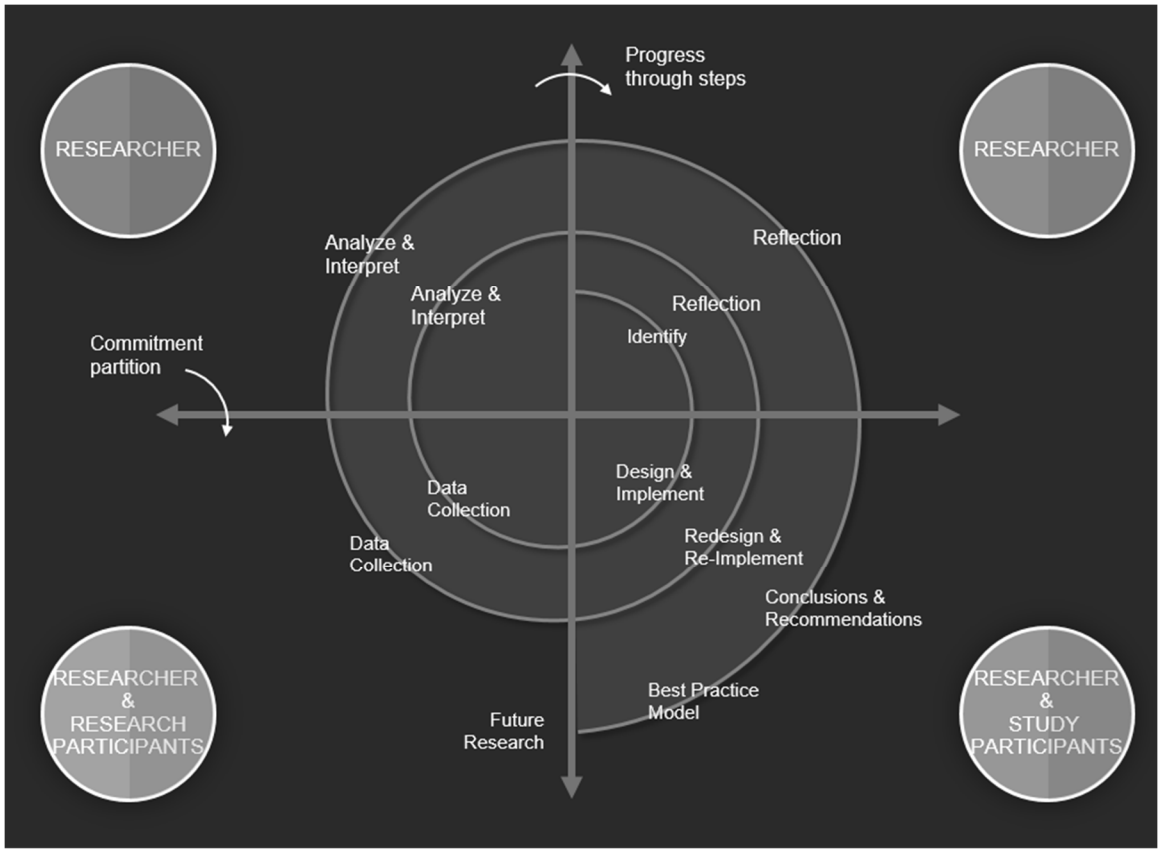
Research Questions

This action research plan was conducted over the course of three full research cycles. The first cycle assessed senior leadership's perspective on the current assessment process. Following cycle one, cycle two provided for a deeper dive into any issues emerging from cycle one's outcomes related to assessment and the use-of-results efforts. Cycle two allowed me to not only pursue depth, of the problem, but also breadth as I

expanded the scope beyond senior leadership into lower echelons of administration. Cycle three provided a post-assessment following the implementation of the Professional Assessment Community. Additionally, this process was intended to be collaborative in nature, thus Figure 2 depicts not only the cyclical research processes but also a participant demarcation line visualizing where and how collaboration was to occur.

Figure 2

Researcher and Research Participant Roles in the Cyclical and Collaborative Research Design



Each round of data collection included an analysis and interpretation phase followed by the dissemination of results to the PAC. PAC meetings began with a discussion of the results from the prior cycle, and a determination of the next course of action. In the spirit of participatory action research (Stringer, 2007) the participants of the study along with University officials were the key players of the discussion. As described above, the PAC meetings are, perhaps, the most important piece of this study as they bring University officials face-to-face with the realities of a meaningful data-driven decision-making process and culture. Additionally, the PAC meetings facilitated a public and real experiential reflection (Altrichter, Kemmis, McTaggart, & Zuber-Skerrit, 2012) opportunity between participants. The following action research questions served as the focal point of this study and are broken down by research cycle:

Pre-Cycle Reconnaissance

PC – RQ1: How do academic administrators at Mountain State University describe the assessment process's use-of-results efforts as they relate to being integrated or siloed?

PC – RQ2: How do academic administrators describe the pervasiveness of assessment-related collaborative decision-making?

PC – RQ3: How are institutional logics reflected in the evolution of assessment's use-of-results process and culture?

Cycle One

PAC Implementation, Observation & Modification

CI – RQ1: How has collaboration around the use-of-results assessment model changed?

CI – RQ2: What redundant use-of-results assessment activities have been identified and removed?

Cycle Two

PAC Observation & Modification

CII – RQ1: How have the roles and responsibilities of academic administrators changed in the moved towards an integrated use-of-results assessment model?

CII – RQ2: What impact has the PAC had on the closing-the-loop process?

Cycle Three

PAC Observation & Sustainability

CIII – RQ1: How has the integrated model shaped the University's culture of assessment?

CIII – RQ2: What contributes to the sustainability of the integrated assessment use of results model?

Limitations and Delimitations

Innovation is not a new concept (Brown, 2014; Rogers, 1962), however its application to higher education is, relatively speaking. Innovation tends to carry with it a connotation of high expense (Levine, 1980) as well as facing resistance to change through preservation of the status quo (Argyris, 1990). Thus one initial limitation challenging this study was to overcome institutional inertia at Mountain State University and ensure the toleration of innovation and change. A secondary limitation existed within the dearth of personnel. At present each academic school at Mountain State University is staffed with only a handful of administrators who simultaneously serve on myriad institutional committees. The creation, and implementation, of a new committee for the purposes of reviewing programmatic outcomes assessment data that includes division-wide representation may be a viable function as a subcommittee of an existing entity, i.e., the Learning Outcomes Assessment Committee which is a standing committee embedded

with Mountain State University's governance model. And in this regard, the additional workload for limited staff may not be perceived as undue. A third limitation exists in that Mountain State University does not use "faculty" in the traditional sense. All instructional personnel at Mountain State University are independent contractors hired on an annual basis to facilitate learning through self-directed online courses as is reflected in the Mission statement of the University: *Mountain State University provides flexible, high-quality, collegiate learning opportunities for self-direct adults.* These independent contractors all meet similarly required qualifications as traditional faculty with 75% of all mentors possessing a doctoral degree and 24% having a terminal master's degree according to a May 2019 snapshot. However, the University employs none full-time. This model is unique in higher education; therefore, this research will not capture traditional faculty engagement with or perceptions of this new assessment process.

Assessment in higher education is typically faculty-driven (Banta, 2002; Banta et al., 1996; Suskie, 2004; Suskie, 2015). The model in place at Mountain State University, through the unique "mentor" model which leverages subject matter experts as non-traditional faculty but rather independent contractors, contracted to perform a specific task veers away from the more traditional assessment models. Within the model at Mountain State University, assessment is driven through joint accountability between the Office of Learning Outcomes and the academic schools. A master assessment schedule has been established to allow for 100% programmatic outcomes assessment over a three year period. The Assistant Provost for Learning Outcomes, myself, works closely with the academic Deans and their staff to develop assessment rubrics, design assessment projects, identify mentors who will be contracted to score artifacts, develop sampling

plans and to execute each programmatic assessment project. The results from the mentor's scoring of artifacts are then reviewed by the Office of Learning Outcomes and the academic schools, their respective curriculum committees, and action plans are developed and implement subsequently by the schools while the Office of Learning Outcomes documents these efforts for future reporting. Within this model the Office of Learning Outcomes has general oversight of the assessment process and general accountability for its execution. This study is centered upon the issue that, through this assessment process, the assessment-drive program improvement decisions are made between a single academic school and the Office of Learning Outcomes, in a silo. Because there are five academic schools, there exist five silos of assessment data-driven decision-making. This study aims to integrate these silos through a common forum for assessment data-driven decision-making or use-of-results.

Impact on student learning achievement resulting from decisions made by the PAC represent one delimitation of this study. Rexeisen and Garrison (2013) found the average implementation time for a closing the loop action (Banta & Blaich, 2011; Ewell, 2001) was 1.68 years. As such, demonstrating the impact of the PAC through the traditional assessment process i.e., assess, analyze, interpret, change, re-assess (Banta & Blaich, 2011) would not be feasible given the resources and time available for this study. For this reason this study focused on the process, experiences and perceptions of research participants, involved in Mountain State University's closing the loop assessment practices (Banta & Blaich, 2011; Ewell, 2001).

Definition of Terms

This study contains the following specialized terms and associated definitions:

- **Assessment –** A demonstration of student learning through measurement of student performance against a set of predefined outcome statements (Suskie, 2004).
- **Closing the Loop –** The use of data resulting from an assessment of student learning for continuous improvement (Banta & Blaich, 2011; Ewell, 2001).
- **Institutional Logics –** a set of material practices and symbolic constructions that constitute organizing principles (Friedland & Alford, 1991).
- **Professional Assessment Community (PAC) –** A group of Mountain State University Academic Affairs staff including one representative from each of the five academic schools.
- **Silo –** An organizational structure i.e., a division, department or academic school or a set of operational practices that operate with minimal interaction with peripheral/adjacent organizational entities or operational practices.

Significance

Mills (2003) rephrases a seminal statement issued by Kurt Lewin (1946) relative to the connectedness of action and research. In his statement, Lewin argued for the necessity of action in all manners of research and research in all manners of taking action. The latter of these statements may be seen in modern American higher education with the advent of the data-driven decision-making era and a major focus on higher education accountability as demonstrated through student learning assessment. In a sense, action research as a process can be viewed as the engine driving assessment efforts with a focus

on the close-knit focus on the association between action and research. Data-driven decision-making is perceived outcome of the assessment movement in American higher education. The phrase, closing-the-loop (Banta & Blaich, 2011; Ewell, 2001), is ubiquitous in assessment circles and a requirement for regional accreditation irrespective of geographic location. Additionally, each of the six regional accreditation agencies in the United States contains requirements for the assessment of student learning and the demonstration of how those data are used for course, program, or institutional continuous improvement. Coupling the need for accountability and transparency of modern American higher education institutions, as a result of social pressures evident within the institutional logics model (Thornton & Ocasio, 2008) and also within Brown's (2017) seven accountability silo model, this study may serve dual purposes. The significance of this study lies in that it may generate a best practices model for the unique setting of Mountain State University to follow in an effort to reduce the silo-based operations potentially in existence due to complex evolution, influenced by macro and micro social institutions, for the purpose of compliance on many levels.

Summary

In summation, the need for this study exists because modern higher education institutions may not yet have optimized their accountability response systems i.e., effective demonstration of how assessment data is used for the betterment of students, due to multiple layers and/or columns or silos of redundancy (Brown, 2017; Thornton & Ocasio, 2008). This study aimed to identify and remove barriers to silo integration such that higher education institutions may more efficiently and effectively use assessment data.

Organization of this Dissertation

Through a post-positivist lens, the purpose of this mixed methods action research study was to examine the impact resulting from the development and implementation of a University-wide programmatic outcomes assessment data analysis professional learning community at Mountain State University. This study aims to provide a model for Mountain State University academic leaders to follow when determining the most effective and, results-driven, model for programmatic outcomes assessment data reflection and operationalization. This dissertation consists of five chapters. Chapter One positions the research problem in the national and local context of education, social responsibility and accountability, and the theoretical/practical domains of institutional logic theory, educational change theory and educational leadership survival theory. Chapter Two delves more deeply into the theoretical framework guiding this study and review relevant literature on the topic of institutional logic theory, educational change theory and educational leadership survival theory. Chapter Three describes this study's research methodology. Chapter Four contains a description and analysis of the data gleaned through this study. Chapter Five contains my conclusions and recommendations based on data analysis contained in chapter four.

Chapter 2

Literature Review

The nature of this study focuses on silo integration between academic units within a public higher education institution. An ongoing struggle exists in higher education relative to collaboration between and among these silos (Brown, 2017; Kekahio & Baker, 2013; Kezar, 2005; Lakos & Phipps, 2004; Miller, Jones, Graves, & Siever, 2010). Specifically, Kezar (2005) illustrates the issue of silo existence in academic institutions by focusing on the dichotomous perception of individuals, comprising said silos, which crosses between those who wish to work collaboratively but feel that they are bound by structure and cultures that reinforce individual work (p.52). There may also exists pockets of inter-silo and intra-silo collaboration outside the normal culture. Wilcock (2013) as well as Brown (2017) confirmed Kezar's assertions by providing context for the evolution of silos as they relate to external pressures of modern higher education institutions. This issue of silo formation is not itself a modern issue for higher education institutions. It represents a century-old historical problem (Kezar, 2005) for higher education institutions. Additionally, this study attempts to examine how silos operate with respect to the use of student learning assessment data. This study aims to further the research of Kezar, Thornton and Ocasio (2008), Ndoye and Parker (2010), Wilcock (2013) and Brown who endeavored to answer the question of how colleges and universities can move from siloed bureaucratic administrative structures to a more collaborative organizational structure.

This literature review establishes the need and context of my study by examining three areas of existing scholarly discourse relative to the topic of silo-based assessment

structures within modern American higher education. This chapter begins with a review of the first key concept explored, the triggering factors driving higher education's assessment transformation which ties in the theory of institutional logics (Brown, 2017; Friedland & Alford, 1991; Thornton & Ocasio, 1999). Institutional logics, coupled with educational change theory (Fullan, 2007) and silo integration theory (Andrade, 2011; Brown, 2017; Ndoye & Parker, 2010; Wilcock, 2013) center my conceptual framework as seen in Figure 3. Chapter Two then focuses on the second key concept, examination of several structural models. These structural models appear as vehicles for silo integration on my conceptual framework. Finally, a third key concept explores a synthesis of related literature around the topic of professional learning communities akin to the Professional Assessment Community that is intended for use in this study's action research project. The literature serves as points of anchoring relative to the operation of the PAC and, in an overarching manner, with respect to silo integration and appear as topical keywords on the conceptual framework. This chapter then concludes with a summary of the key concepts explored, as they relates to integrated vs. silo-based structures in and around the student learning assessment process.

Silo: A Definition

Wilcock (2013) defines a silo as "When people in organizations focus on their own needs and goals to the exclusion and sometimes detriment of the wider organization and its aims – a lack of joined up, systemic or holistic thinking and behavior" (p. xi). This study applies the wider definition, as provided by Wilcock, of silos down to a more specific focus on assessment silos. Brown (2017) argued that the assessment silo is one of higher education institutions seven accountability silos, i.e., assessment, accreditation,

institutional effectiveness, educational evaluation, institutions research, educational measurement and higher education public policy. Leveraging Brown's reframing of what a silo actually is, at the level of assessment within higher education institutions, he offers that silos are a collective group of individuals, focusing on their own sense of self (Brown, 2017; Thornton & Ocasio, 1999) as determined by institutional practices and symbolic constructions (Friedland & Alford, 1991; Thornton & Ocasio, 1999, p. 101), also known as institutional logics. In this respect, groups of individuals influenced by these institutional logics, and separated either physically, through an absence of communication, or through cultural difference, could be defined as a silo.

Conceptual Framework

This action research study itself is situated within positivist and post-positivist worldviews. Institutional logics (Brown, 2017; Thornton & Ocasio, 1999) serve as the basis for understanding higher educational institutions and how, and why, they migrate toward silos. The conceptual framework accounts for the challenges facing the breaking down of silos in favor of increased collaboration leveraging silo integration theory (Andrade, 2011; Brown, 2017; Ndoye & Parker, 2010; Wilcock, 2013).

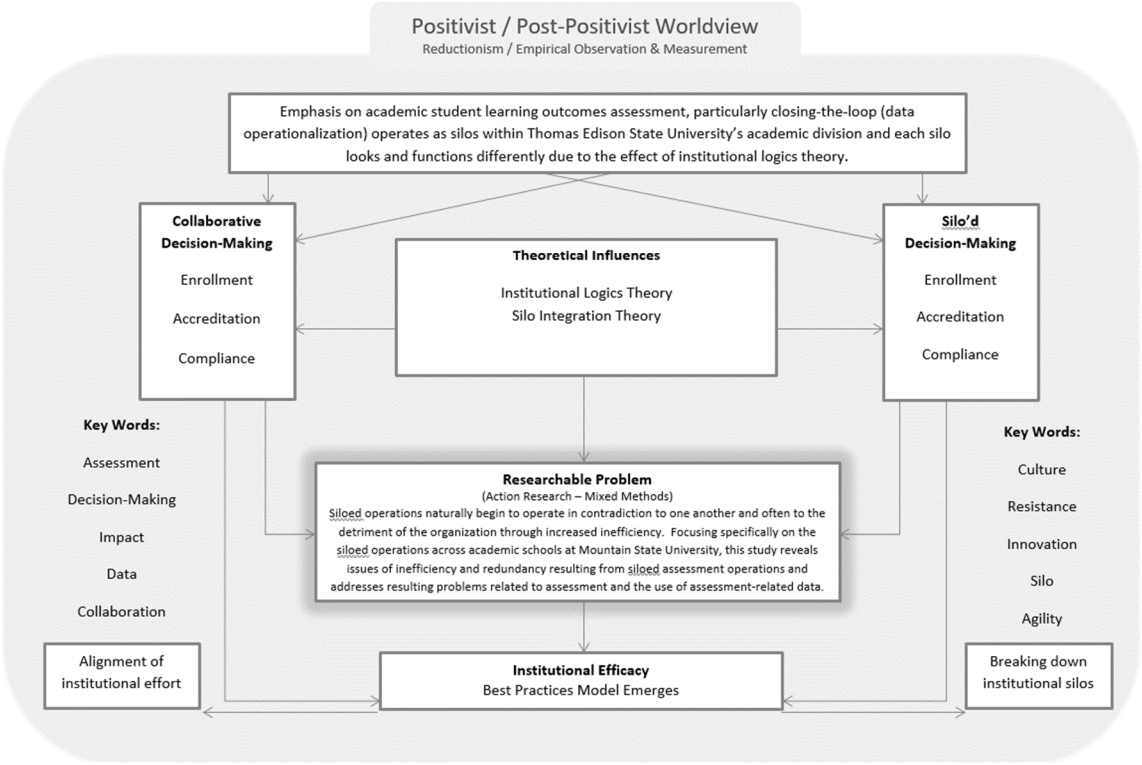
Thornton and Ocasio (1999) considered the theory of institutional logics a cadre of historical practices, values, and rules influencing how individuals organize their time and space and ultimately "provide meaning to their social reality" (p. 804). Brown (2017) expanded or rather elevated the application of this theory applying it to holistic institutions and their smaller divisions and subdivisions. In essence, Brown portends that organizations, like individuals (Thornton & Ocasio, 1999), react to certain external

influences, organizing themselves logically to ensure survival or, in the case of higher education institutions, compliance and ongoing operations.

The conceptual framework depicted in Figure 3, attempts to integrate these three influencing theories, positioned within my own worldview, and related to the core problem of this study. Influenced by the theory of institutional logics (Brown, 2017; Thornton & Ocasio, 1999), as well as educational change theory (Fullan, 2007), and, silo integration theory (Andrade, 2011; Brown, 2017; Ndoye & Parker, 2010; Wilcock, 2013), my conceptual framework positions siloed decision making infrastructures as polar opposites to collaborative decision-making infrastructures. Both infrastructures have unique characteristics and traits and operate in distinct ways, which include having wide-ranging and diverse impacts on enrollment, accreditation and compliance issues (Brown, 2017; Kekahio & Baker, 2013; Kezar, 2005; Lakos & Phipps, 2004; Miller et al., 2010). Through exploration of the existing infrastructure model at Mountain State University, relative to academic affairs decision-making infrastructure around use of assessment data, my conceptual framework helps to frame the comparison effort between silo vs collaborative decision-making models with an understanding of how these structures have been influences and how they have evolved over time.

Figure 3

Conceptual Framework



Ultimately, through addressing the research problem, i.e., the deconstruction silo-based assessment structures and the reconstitution as collaborative and integrated assessment structures, an efficient and effective best practice has emerged that positively impacts enrollment, accreditation, and internal & external compliance needs.

Precipitating Higher Education Transformation

As highlighted in Chapter One, American higher education institutions find themselves operating in a new era in which access to information is both instantaneous and ubiquitous. Of specific focus for regional accreditation agencies, the United States Department of Education and the general public is the way in which the public is provided access to data on, and ultimately perceives, accountability and quality (Bassis,

2015; Farkas, 2013; Marrs, 2012; Schoepp & Benson, 2016) of higher education institutions. Institutionally-generated data on effectiveness, which encapsulates graduation rates, persistence and retention, satisfaction, job placement rates as well myriad other data points, are typically reported to educational authorities, i.e., the integrated postsecondary education data system (IPEDS) overseen by the United States Federal Government, and are as reported on institutional websites, thus making the data widely accessible.

Bassis (2015, p. 1-2) portrays America's discontent with higher education as represented by four concerns which I will explore below whilst intertwining the concerns of Judith Eaton, President of the Council for Higher Education Accreditation (CHEA). Eaton echoed Bassis's concerns almost verbatim in a December 2016 Inside Higher Ed article. Eaton (2016) and Bassis articulate America's concerns as having too few people who begin their college education graduating as well as the concern of the job readiness of those who do graduate. Eaton (2016) furthered this concern by indicating a dissatisfaction of employers with the skills of college graduates. Carnevale (2013) points out the estimates of federal economists that 30% of the U.S. employment rate change during the great recension was attributed to an employer/college graduate skills mismatch. Both Eaton and Bassis cited the high cost of attendance for higher education and that it remains accessible only for the upper class with Eaton adding the rise in associated student loan debt incurrence as particularly problematic for Americans. Lastly, Bassis describes the devolution of higher education from the once "…powerful engine for social mobility" (p. 2) to something that no longer accelerates an individual's progress up the socio-economic ladder with Eaton confirming the issue of diminishing

prospects for employment for college graduates. Eaton's (2016) concerns point toward the ultimate question of whether or not college is worth the time and cost. Eaton further reflected the need for transformation in higher education as political leaders mount pressures for more accountability (Eaton, 2016) on the part of higher education. As a result, argues Bassis, higher education in America is undergoing rapid and drastic transformation. Citing the leveraging of new technology, new pedagogical models, and even new business models, Bassis points toward a future of American higher education that looks very different from its past.

Bassis (2015) offers the following perspective on how future public scrutiny on American higher education institutions will manifest itself:

> Efforts to make higher education more affordable, to increase the level of student learning, and to enact successfully the equity and excellence agenda depend on having an established frame of reference by which to judge educational quality. (p. 3)

The frame of reference (Bassis, 2015, p. 3) referred to, is itself, assessment; namely all aspects of institutional assessment but primarily the assessment of student learning. And whilst Bassis postulates on this widely accepted metric, the definition of learning is changing. Barr and Tagg (1995) argued that higher education, once held accountable for providing instruction, is now being held accountable for providing learning. The paradigm shift from instruction to learning (Barr et al., 1995) fundamentally changes the metrics higher education must use to demonstrate quality, which move from inputs to outputs i.e., measurement of student learning.

Academicians like Bassis, and Barr and Tagg, among others were calling for transformation in higher education. In 2005 the Commission on the Future of Higher Education, also known as the Spellings Commission for then United States Secretary of Higher Education Margaret Spellings (Bassis, 2015) produced a report citing several required transformations of American higher education. These included the expansion of college participation and success by creating a seamless pathway between high school and college as well as implementing cost-cutting measures. Much emphasis in the Spellings Commission report was placed on streamlining the federal financial aid process (Bassis, 2015). Reflecting the concerns espoused by Bassis and Eaton, the report indicated a need for transparency about cost, price, and student success outcomes including representation of the value-add principle for what the assessment of student outcomes indicates overall for the student. Lastly, the report cited the need for the establishment of a culture of continuous innovation and quality improvement in the overall learning process (Bassis, 2015). This study focuses primarily on the student success outcomes necessity of the Spelling's Commission report including, as well, the need for continuous improvement practices related to assessment of student outcomes.

Structures in Higher Education

"Assessment clearly divides accreditors, administrators, and tenure-line faculty" (Danley-Scott & Scott, 2014, p. 31). According to Danley-Scott and Scott (2014), accreditors view assessment, if done well, as an ongoing and systematic process through which academic programs are continuously improved for the benefit of student achievement. Administrators, following Danley-Scott and Scott (2014) as well as Brown (2017) and Thornton and Ocasio (2008), view assessment as an activity necessary to

adequately respond to the needs of accreditors. This should not be read to imply that administrators see no value in assessment. Rather it should be interpreted from the perspective of how structures form and why. In this case, how assessment operations are organized and executed within higher education structures. Danley-Scott and Scott conclude the perspective of faculty relative to assessment tends to vary between the bookends of an attempt to thwart academic freedom and/or that of a simple compliance exercise versus that of it serving as a tool to support quality teaching and learning. In addition, Danley-Scott and Scott highlight the importance of integrating perspectives on teams assigned to the development, and ultimately the analysis/operationalization of assessment efforts.

Institutional Theory

Institutional theory (Meyer & Rowan, 1977) offers a perspective of viewing American educational organizations as having been organized by "institutional rules" (p.340). "Institutional rules function as myths which organizations incorporate, gaining legitimacy, resources, stability, and enhanced survival prospects" p. 340). From these rules, Meyer and Rowan (1977), believe that educational organizations build and organize themselves in response to rationalized myths relative to responding to external pressures (Greenwood et al., 2012). Meyer and Rowan (1977) theorize that these four rules, which in the education context have implications for students, teachers, topics, and schools, are inherently "decoupled" (Meyer et al., 1977) from an organization's activities and outcomes. In lieu of internal accountability systems, educational organizations look externally for validation, ostensibly through programmatic and regional accreditation (Meyer et al., 1977). Meyer and Rowan do support the notion that other internal controls

exist, however they codify internal supports for accountability as that of "logic of confidence" (p. 340) which takes the place of "…coordination, inspection, and evaluation…" (p.340). In this, Meyer and Rowan articulate how educational organizations instill confidence in both internal and external stakeholders. The list of stakeholders provided by Meyer and Rowan include the state and federal governments, the community and the profession, students and their families and teachers themselves. The influence of Meyer and Rowan here upon institutional logics (Brown, 2017; Thornton & Ocasio, 2008) and their respective market, state and profession categories is unmistakable. The "logic of confidence" (Meyer et al, 1977) idea supports that if educational organizations can instill a sense of confidence in the litany of external stakeholders, then attention on those organizations' outcomes is unnecessary. Another way of viewing this aspect of institutional theory (Meyer et al., 1977) is that if the educational organization looks good from an input's perspective, then the outcomes, good or bad, may be overlooked. Not only does a focus on outcomes, e.g., student learning measurement or taught content, become unnecessary, according to Meyer and Rowan it also increases costs, creates undue burdens on administrators and faculty and casts doubts of the efficacy of the organization.

Meyer and Rowan (1977) further introduce the concept that American educational organizations bear great pressure by external entities, e.g., accreditors. And they offer the idea that "to maintain ceremonial conformity, organizations that reflect institutional rules tend to buffer their formal structures from the uncertainties of technical activities by becoming loosely coupled, building gaps between their formal structures and actual work activities" (p. 341). This organization action is responsible for silo creation. Though

Meyer and Rowan (1977) argue that institutional theory loses some of its credibility in modern-day accountability contexts, remnants of previous institutional structures continue to exist at Mountain State University. In particular, the silos formed during previous administrations and cultures around assessment persist.

Greenwood et al, (2012) view the manifestation of isomorphism across institutions of higher education as in response to a set of rational myths of proper conduct required or expected by accrediting agencies and other external pressures. Greenwood et al., (2012) use isomorphism in this regard to explain why many institutions of higher education look and function similar to one another, as each institution is responding to the same set of perceived rational myths. Additionally, Greenwood et al (2012) cite the broad concern around isomorphism citing the homogenous structures of higher education institutions as inherently stifling innovation. This line of thinking around the structural similarity we see in institutions of higher education provides context around institutional logics (Brown, 2017; Greenwood et al., 2012; Thornton & Ocasio, 2008) as well as the segmenting of organizations into specialized units (Meyer et al., 1977) and the buffering that Meyer and Rowan refer to aids directly in the development of silos.

The relationship between isomorphism and institutional logics is that of multi-directional influence. Common environmental conditions drive institution isomorphism in higher education which, in turn, lead to the development of ritual practices, beliefs, and expectations of higher education administrators, in the context of this study. These practices, beliefs, and expectations, also known as institutional logics (Brown, 2017; Greenwood et al., 2012; Thornton & Ocasio, 2009) then influence adjacent units in the same higher education institution.

The overarching notion that Meyer and Rowan (1977) are attempting to convey here is that through a decoupling of structures from activities, educational organizations can reduce questions and concerns about educational effectiveness related to the established ritual categories which ultimately come together to form an educational organization's culture. This decoupling model is one recognized by Greenwood et al. (2012) for institutional change. Greenwood et al. (2012) recognize, as do Meyer and Rowan (1977) that intra-departmental and cross-divisional undercurrents may play a role in organizational structuring within higher education institutions.

Ultimately, Meyer and Rowan (1977) purport the minimization of resource needs dedicated to coordination and control i.e., centralization, and that through decentralization an educational organization can increase the external perception of worth relative to ritual categories. Thus, Meyer and Rowan argue that the decoupling of educational organization's internal structures are a successful strategy for ensuring the logic of confidence in a diverse environment. Their work, however, predates the modern-day pressures brought to bear on American higher education institutions, specifically the shrinking of resources and the move to a more centralized administrative environment due to myriad factors that will be explored through this literature review. I believe we can visibly see the shifting paradigms from the social reality construct in place during the time of Meyer and Rowan in the 1970s. Bowring (2000) foresaw this paradigmatic shift when she examined institutional theory development.

New Institutionalism

As American educational organizations continued to evolve, so too did the scholarly discourse on institutional theory. The new institutionalism is considered by Meyer and Rowan (2006) as the next iteration of institutional theory. Meyer and Rowan (2006) cite the disenchantment with self-interest as one catalyst for the paradigmatic shift seen between the origins of institutional theory and new institutionalism. Meyer and Rowan (2006) offer insight, during the 1990's time frame, into the dearth of new institutionalism's appearance in educational research. Specifically, they point to many scholars having accepted the earlier 1970s and 1980's work of Meyer, J. and Rowan (1977) and Meyer and Scott (1983) as institutional theory's final form. Meyer and Rowan (2006) believe that institutional theory has evolved in parallel with the shifting landscape of American higher education (p.2). However, Meyer and Rowan (2006) draw attention to the slow acceptance of new research methods, i.e., new institutionalism, and how that contrasts with the fast pace of change in American higher education.

Pointing specifically at the United States, Meyer and Rowan (2006) identify major changes in higher education precipitating increases in centralization and pragmatics. In addition, they cite an increase in the external and internal demand for accountability and a strengthened focus on "educational productivity" (p.2). Meyer and Rowan (2006) offer three distinct changes driving change in education. The first is the increase of providers or what they refer to as provider pluralism (p.2). Here, Meyer and Rowan focus on the increase in higher education institutions including the appearance of for-profit educational institutions and alternate credit providers. They go on to cite how education is playing more of a role in the United States Economy, with specific attention

to the increase in knowledge-worker jobs as well as education playing a more pivotal role in society in general. In contrast to the work of Meyer and Rowan (1977), Meyer and Rowan (2006) observe a change to the decoupling strategy of the former iteration of institutional theory. Meyer and Rowan (2006) suggest a revision to the theory in favor of "more tight coupling" (p.2) as increased needs for accountability of American higher education institutions is called form. Centralization and more closely held control are a staple of the new institutionalism.

Meyer and Rowan (2006) predicted the withdrawal of the state as the driving force behind institutional regulation and, citing this retreat as a possible catalyst for individuality between and among higher education institutions, they offer the potential for a paradoxical effect to occur. As the state withdraws as a leading regulator of higher education institutions, the emergence of new structures, specifically for-profit structures, occurs. These structures greatly resist individuality (Meyer et al., 2006) and will, instead, choose to organize themselves in response to meeting the needs of shareholders which forces efficiency as a direct result to increase shareholder value. As these for-profit institutions organize themselves and as more traditional public and not-for-profit educational institutions undergo restructuring, an understanding of institutional logics (Brown, 2017; Thornton & Ocasio, 2008) becomes relevant. Within the new institutionalism (Meyer et al., 2006) institutional logics serves as a way to understand and interpret the set of material practices and symbolic constructs that themselves serve as organizing principles for institutions (Friedland et al., 1991). These organizing principles react directly to the needs of the institution. The notion of the decoupling between material practices and efficacy (Meyer et al., 1977) has given way to the call and need for

more tight coupling of practices and efficacy (Meyer et al., 2006). This re-coupling effect, driven by the market, state and profession (Brown, 2017; Thornton & Ocasio, 2008) has catalyzed change in the organizing principles for many institutions though organizational responses vary.

Institutional logics offers a way to understand and interpret the linkage between the external change, the organizational principles of institutions, and the impact on practices and efficacy demonstration from within institutions. This study intends to examine these effects through the perceptions and experiences of Mountain State University academic administrators who engage with these variables on a daily basis.

Higher Education Culture and Structure

One of the seminal models for understanding higher education culture and structure, and also providing a strategic framework for transformation is the four-frames model (Bolman & Deal, 2008). Of the four frames used to understand and transform higher education, three touch on higher education structures in some respect, i.e., human resource, political and symbolic, however the fourth structural frame also applies to this research study (Bolman & Deal, 2008, p. 45). The structural frame emphasizes relationships and roles (Andrade 2011). Relationships and roles are critical to understanding the dynamics between and among silos and perhaps even more critical when attempting to break down silos. In identifying the core problem that this research study intends to address, I acknowledge that there is an ever-present challenge to higher education in that departments and programs are generally loosely coupled with the organizations in which they exist (Andrade, 2011; Eckel et al., 1999). Moreover, Andrade and Eckel sponsor the notion that whilst the roles of administrators and faculty are

established, and different from one another, assessment itself remains a shared responsibility.

Silos in Higher Education

Brown (2017) provides a clear rationale for why silos in higher education form. The research around institutional logics dictates that institutions will organize and reorganize themselves in reaction to changing external dynamics. At times, this evolution is referred to as creep. Gaston (2018) evidences the regulatory creep by regional accrediting agencies within the United States over time in Figure 4.

Figure 4

Accreditor Expectation Evolution

Decade	Accreditor Expectations: Institutions and programs must . . .
1980s-1990s	Document their plans for assessment.
2000s	Show evidence that their assessment plans are operational and producing results.
2010s	Show evidence that assessment results are prompting improvements through their influence on planning, budgeting, and curricular design.

Note. Reprinted from Gaston, P. L. (2018, April). Assessment and accreditation: An imperiled symbiosis. Urbana, IL: University of Illinois and Indiana University, National Institute for Learning Outcomes Assessment. Reprinted with permission.

In Figure 4 we see the evolution of assessment requirements toward what higher education typifies today as the assessment cycle (Banta et al. 1996), e.g., turning assessment results into action. Higher education institutions have responded to these increasingly demanding requirements over their years of existence (Brown, 2017) and have organized themselves into silos in order to respond effectively. As assessment

regulatory creep has occurred these silos have become further isolated and layers of complexity have increased. The next sections of this chapter will introduce infrastructure evolution within higher education institutions in response to pressures like these among other organizational structure influencing factors.

The Middle States Commission on Higher Education (MSCHE), formerly known as one of the six regional higher education accreditors, launched its newest set of accreditation standards for colleges and Universities in 2015. This version of accreditation standards contains seven standards each with a set of applicable criteria. The last criterion in each of the seven standards begins with "Periodic of assessment of…", for example, Standard I Mission and Goals, the last criterion reads "Periodic assessment of mission and goals to ensure they are relevant and achievable." Looking at Gaston's (2018) evolution of accreditor expectations with assessment, and now considering MSCHE's recent expansion to include a review of assessment and closing the loop efforts with each and every standard, it is evident that the expectation for accreditors, of assessment-related activity, now permeates every aspect of a higher education institution.

Given the escalating emphasis on assessment from academics to support and administrative units as well, modern higher education institutions face some danger in continuing the status quo of siloed assessment models. When assessment operations are limited the costs of siloed operations are as well. However, as assessment efforts begin to permeate every aspect of an institution's operations, the costs will be magnified.

The Costs of Silos and Non-Collaboration

Wilcock uses the work of Capra (2003) to liken living organisms to human-composed organizations in that both entities require a steady stream of resources (p. xii) to continue their existence. If denied this constant flow, say through strict boundaries or silo walls either physical or procedural, the life/organizational resources required will become unavailable. This then leads to the problems for the organism or for the silo-based organization (Wilcock, 2013). Wilcock (2013) provides twelve non-collaboration costs to any organization. Although most of the twelve non-collaboration costs that Wilcock cites appear self-evident, a deeper dive may perhaps emphasize at what scale these non-collaboration costs affect the larger organization, in this case the University.

In exploring the negative effect of silos on shared learning, knowledge transfer, and innovation, we need only consider operational logistics for the first two (Brown, 2017). In a closed system, the opportunities for shared learning and knowledge transfer are inherently closed through the lack of collaboration or even information dissemination opportunities.

With respect to Wilcock's (2013) missed opportunities, resting upon the foundation of a silo-based infrastructure (Wilcock, 2013), he asserts that the lack of interaction discourages opportunistic realization and capitalization. Without external influence the triggers for opportunity realization are minimized. Wilcock goes on to list a potential delay in the completion of work as another non-collaboration cost to organizations. It is unclear, however, from Wilcock's argument explicitly how silo-based structures slow down the completion of work. This could be an opportunity for future study. Along those same lines, Wilcock's next non-collaboration cost is also somewhat

ambiguous, i.e., repetition of mistakes, again potentially a topic of future study. The latter portion of this cost, the reinvention of wheels, is expanded upon however. Two siloed units could be, in theory, simultaneously engaging in similar work, thus reinventing the wheel. However, why Wilcock believes that mistakes would be repeated is unclear unless said mistakes are occurring simultaneously within disparate silos.

Of the twelve non-collaboration costs that Wilcock (2013) cites, perhaps the most salient cost is that of wasted time and energy as they relate to unproductive conflict. When silos are engaged in unproductive conflict, the focus becomes the conflict itself and the work takes on the role of collateral damage. Wilcock offers perspective on human nature, previously discussed by Argyris (1990) about organization and individual human defense mechanisms. Both scholars conclude that humans will engage in self-defense in an effort to feel protected prior to engaging in meaningful work. It is perhaps for this reason that Wilcock cites this cost as potentially both toxic and contagious.

Decisions emanating from a silo-based infrastructure (Wilcock, 2013) could cause harm to an organization. Here Wilcock (2013) is asserting that the lack of collaborative decision-making is potentially destructive to organizations. Additionally, the notion offered by Wilcock that silo-based infrastructures might also cause a lack of engagement and motivation as well as a delay in completion of work. Wilcock introduces the idea of downstream time & cost implications as well as program failure costs as two more examples of silo-based infrastructure non-collaboration costs. At first glance these appear to be, perhaps, more applicable toward business and industry, however higher education engages in project management just as any business and perhaps even more so now, in

this era of rising costs, shrinking budgets, and increased competition for students (Blumentstyk, 2015; Carey, 2015).

The final two non-collaboration costs introduced by Wilcock (2013) are related to customer perception and the results of the organization. In this context the customers are students and their perceptions entail myriad institutional characteristics including but not limited to; reputation, cost, brand, value, future employment potential, completion difficulty, and student support orientation. Wilcock argues that within a silo-based infrastructure the message provided to students, i.e., customers, could vary such that a unified and consistent institutional message is obscured, e.g., one department may embody certain characteristics through their messaging and action whilst another could portend very different characteristics. Wilcock culminates with a final non-collaboration cost drawing attention to the impact on results. Wilcock's work sheds light on multiple aspects of silo-based infrastructure's non-collaboration costs and concludes with a belief that these issues will negatively impact institutional results.

Assessment Silos

Refocusing on assessment-specific silos, Andrade (2011) offers four challenges and strategies associated with each to combat the silo-based challenges in the area of assessment structures. The first challenge in Andrade's model reflect the silo-based structure along the old adage of the left hand not knowing what the right hand is doing. Within this, we see departments engaging in the assessment process overlap, and typically do so (Andrade, 2011) without clear channels for communication or collaboration. This challenge is further compounded by the lack of a formal infrastructure (Andrade, 2011) for assessment activities. Infrastructure, as used by Andrade, appears to

refer to the committee or governance structure whilst the term system (Andrade, 2011, p. 224) refers more so to the operational processes e.g., templates, deadlines, and data collection methods.

In the example above we see the perils of a closed-off silo-based model, negatively affecting optimal performance (Andrade, 2011, p. 223). Lastly, Andrade touches upon a resource deficiency challenge with respect to organizing an efficient and effective outcomes assessment system through a dearth of experience (Andrade, 2011, p. 224). One thing to consider, relative to the integrated vs silo-based approach is the cumulative experience gained through communication and collaboration (Miller, et al., 2010), a notion reflected in Wilcock's (2013) work. Understanding the challenges that silos present, with respect to assessment efforts, and understanding why silos form in the first place proved salient to this research study.

Acting much like a biological organism reacting to its environment, higher education institutions react and adapt to external pressures forming policies, procedures and practices that organize into (Banta et al., 1996 as seen in Brown, 2017) what Brown (2017) refers to as fields. Brown identified seven fields that operate as silos within higher education institutions: assessment, accreditation, institutional research, institutional effectiveness, educational evaluation, educational measurement, and higher education public policy. Brown further establishes the negative impact of these silo-based operations in stating that "these seven disparate silos lack engagement with one another and possess conflicting definitions of foundational terms" (p. 42). Brown's lack of engagement (2017, p. 42) is a reflection of Andrade's (2011) negative affect of silo-based operations on optimal performance (p. 223) of higher education institutions. Though

Brown's work focuses more on the administrative components, as silos, of higher education institutions, this research study endeavors to apply Brown's silo-formation rationale to academic schools within a single higher education institution. The basis of this application is that schools, much like specialized departments e.g., assessment, accreditation and institutional research, have their own unique external pressures.

Following Brown's (2017) model, those unique external pressures come in the form of specialized accreditation with disparate sets of standards and compliance requirements, unique environments within which to brand, market, and recruit students, and unique employment sectors for graduates. Brown concludes with a synthesis of literature by Gaston (2014), Ewell, (2008), Suskie (2015), and Volkwein (2008) all evidencing, and advocating for, integration of knowledge domains in order to successfully navigate changing social contexts (p. 51). Exploring yet another of Brown's (2017) approaches for broader higher education toward a departmental restructuring, this statement appears compelling: "In an effort to reduce costs, attempts to structure the system of higher education accountability should occur beyond individual universities and give consideration to redundancies across silos" (p. 51). The elimination of redundancies is paramount at any level, inter or intra-institution and thus can be applied to a single department i.e., Academic Affairs, consisting of multiple silos within including individual academic schools. It is precisely these redundancies that Brown asserts as the foundation-degrading practices that usurp resources and time leading to inefficiency and poor performance (Graham, Lyman, & Trow, 1995).

Silo Integration in Higher Education

Brown (2017), through application of organizational theory and institutional logics, proposes a three-pronged approach consisting of engagement, consolidation and elimination (p. 53) to transform the sector of higher education accountability.

With respect to engagement, Brown (2017) asserts that institutions must use scholarship, interaction, and coordination between and among siloed areas. This engagement, according to Brown typically challenges, "establish[ed] norms, values, and cultures of individual silos" (p. 53) precipitating leadership's demonstration of cultural change management acumen. Additionally, as Brown has focused on strengthening organizational cultures of assessment and he allows for generalizability of this process beyond the scope of assessment alone.

Brown (2017) continues with his integration solution with consolidation addressing "…the unification of content between different silos" (p. 53). This calls for an integration of practices, policies and procedures of separate silos and through this consolidation process he (Brown, 2017) expects redundancies to emerge and ultimately be eradicated.

The eradication of redundancy relates to Graham et al.'s (1995) unproductive operations in response to accountability which points toward redundancy and waste within higher education operations. Both Brown (2017) and Graham et al. (1995) theorize that elimination of inefficiencies (Brown, 2017, p. 54) will free up resources and serve as an accelerant toward organizational sustainability. Brown (2017) asserts that silo-based models will ultimately lose their legitimacy within the overall institutional context if they do not effectively engage with salient institution logics. For the purposes of this study,

those institutional logics are inter-school silos and their unique culture, norms, beliefs and values.

Integrated models are not without negative attributes themselves as Wilcock's (2013) work evidenced five consequences of integrated work which include a potential for the lack of clarity, increased workload, trusting others that they may perceive as less capable, increased complexity in dealing with different people, and potentially compromising on preferred ways of doing things. All three of Brown's (2017) integration solution approaches i.e., engagement, consolidation and elimination address the integrated work concerns of Wilcock thus reinforcing the use of Brown's model for integration.

Transformational endeavors such as integrating siloed operations typically require large front-end investment (Brown, 2017; Graham et al., 1995). It should also be noted that integration requires more than forcing individual roles and organizational structures into association (Thornton, 2004). Integration requires the reduction of redundancies and the increase in effective communication pathways to help synergize and optimize operations. The resulting overlap in structures (Thornton & Ocasio, 2008) will reveal contradictions and redundancies within operations, which may serve to support the elimination process touted by Brown (2017). However, integrating silos will require more care and tact than brute force (Fullan, 2001).

Andrade (2011) offers a similar approach to integration siloed operations within higher education. Andrade focuses on the four challenges of the structural frame (Bolman & Deal, 2008) producing a strategy for each challenge. Relating these challenges and Andrade's strategies with the work of Brown (2017) and Wilcock (2013), Figure 5

outlines an informed strategic map for the integration of assessment silos within a single higher education institution.

Figure 5

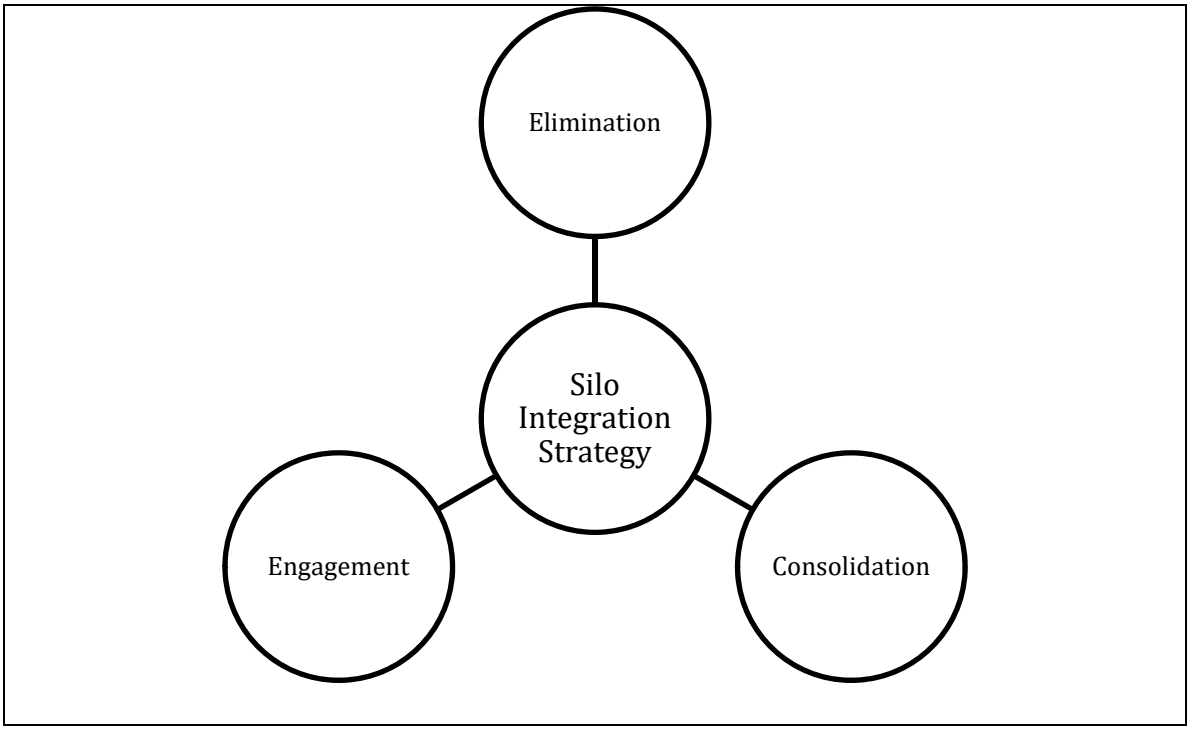
Integration of Assessment Silo Strategy

Challenge	Strategy		
	Andrade (2011)	Brown (2017)	Wilcock (2013)
Assessment at various levels across the institution may involve unnecessary duplication and effort.	Align assessment efforts by linking assessment outcomes, considering the multiple purposes for data is needed, and allowing for flexibility in reporting formats.	Elimination: Exposing and removing redundancies. Reducing ineffective system attributes.	Increasing shared learning/knowledge transfer and innovation. Reducing mistake repetition and wheel reinvention.
No existing infrastructure for assessment work.	Consider roles and responsibilities to create layers of accountability and support at the program, college, and institutional leave and provide opportunities for greater involvement.	Consolidation: Unification of content between disparate silos. Integration of practices,	Reduce wasted time and energy through infrastructure organization and reduction in unproductive conflict due to ambiguity.
No common reporting template, established deadlines, or system for data collection and review.	Design appropriate processes and procedures for planning, collecting and reviewing data, implementing needed changes, and reporting.	policies and procedures of silos into a common set.	Decisiveness.
Lack of experience for general assessment principles related to identifying outcomes and means of assessment.	Provide guidelines and training to increase understanding regarding expectations in terms of number of outcomes, number and types of measures, use of course objectives, rotation of outcomes, and use of self-report data.	Engagement: Increased scholarship among practitioners. Increased coordination and interaction among silos.	Increase impact on results and customers (students and internal stakeholder customers) through engagement and motivational strategies.

Using Brown's strategy to categorize the three-pronged approach to silo integration and embedding the work of Andrade and Wilcock, we observe the domains as depicted in Figure 6.

Figure 6

Three-Pronged Approach to Silo Integration



This three-pronged approach to silo integration served as the foundational underpinning of the strategy deployed at Mountain State University through this research study.

Culture of Assessment

In a 1993 publication, the United States Department of Education espoused notions of institutional struggle in isolation (p. 3) relative to state mandates, regional accreditation requirements and declining student performance concerns (p. 3). Following

the 1984 revision of the Southern Association of Colleges and Schools (SACS) regional accreditation standards and giving rise to the assessment movement in American higher education (Gaston, 2018), the phrase culture-of-assessment was born. Lakos and Phipps (2004) define this as "…an organizational environment in which decisions are based on facts, research, and analysis, and where services are planned and delivered in ways that maximize positive outcomes and impacts for customers and stakeholders" (p. 352). Ndoye and Parker (2010) shed light upon a common principle among institutions with an effective culture of assessment, namely that of agreement (Schein, 1999) on organizationally meaningful practices needed to fulfill goals (Ndoye & Parker, 2010, p. 29). Ndoye and Parker's emphasis on a common set of institutional values allows a connection to be made between this particular challenge, i.e., lack of a common set of institutional values, and the challenges to the structural frame offered by Bolman and Deal (1998), specifically on the lack of common assessment-related principles and procedures. "Creating an effective assessment system at the school, college, or institutional level requires the articulation of a shared conceptual understanding, a common definition of assessment, and the clear expression of assessment expectations and the use of results" (Bresciani, 2005 as seen in Ndoye & Parker, 2010). Operationalizing these guiding principles will have, at its core, a professional assessment community of interested and dedicated individuals engaged in systemic review of institutional and program outcomes assessment data.

An organization's focus on creating an appropriate culture is the most common underpinning of successful organizations (Cameron & Quinn, 1999). Culture, by definition, relates to the behaviors and norms of human societies. If we view higher

education institutions as the collective society, then a culture of assessment would exist throughout said society. Additionally, for a culture of assessment to be optimally effective it cannot exist within a silo (Brock et al., 2007; Lakos & Phipps, 2004; Ndoye & Parker, 2010; Suskie, 2004).

Ndoye and Parker (2010) conducted a study on creating and sustaining a culture of assessment in higher education. Their study focused on six primary domains of facilitating factors and challenges in the establishment of a culture of assessment, the first of which is leadership. Ndoye and Parker cite leadership as one of the key attributes of any organization's success. Ranging nearer to the establishment of a culture of assessment, the leadership of the team responsible for assessment is the gatekeeper for an assessment operation that works versus one that fumbles (Brock et al., 2007; Lakos & Phipps, 2004). Lakos and Phipps (2004) further refine this argument pointing specifically toward the leader's "performance ethic" (p. 353) and their visible and continuous commitment to the work of assessment. Likewise, Suskie states that when campus leadership is committed to assessment, then assessment works (2004, p. 35-36). Here, Suskie (2004) is referring pointedly toward the financial burden of properly executed assessment and the leadership commitment essential to success.

Ndoye and Parker (2010) state that faculty should be involved in the assessment process with respect the development of learning objectives and process improvement overall. Training for faculty, Ndoye and Parker offer, is critical to success. Research conducted between the viability of assessment efforts and required resources suggests that there is a direct correlation between successful assessment operations and sufficient resources (Brock et al., 2007; Lakos & Phipps, 2004; Ndoye & Parker, 2010). On the

topic of resource allocation, Ndoye and Parker portend that the required resources include an operating budget, technology, physical resources, staff competence and professional development opportunities. Ndoye and Parker's fourth consideration within a culture of assessment is student participation. Citing a more engaging opportunity for students beyond survey completion at the end of a course, Ndoye and Parker argue that students should be involved with data collection instrument development, assessment results analyses, and overall assessment planning. This evolution from a provider of data (Ndoye & Parker, 2010, p. 30) to one of an active stakeholder and engaged participant not only will increase student learning (Falchikov, 2005) but will also indirectly support student motivation efforts and ultimately create more meaningful assessment efforts (Suskie, 2004).

Ndoye and Parker's (2010) study identified characteristics of institutions relative to their stage in the process of developing a culture of assessment. Staring with Beginning, moving then into Progress, and culminating with Maturation, Ndoye and Parker matrixed those three stages against four categories: assessment integration in daily practice, leadership, use of assessment data, and communication (p. 33). Ndoye and Parker's matrix can be seen in Figure 7.

Figure 7

Culture of Assessment Maturation Benchmarks

Categories	Has Established (Maturation)	Is Establishing (Progress)	Has Not Established (Beginning)
Assessment integrated in daily practice	- Reward collaboration, including student participation -Pilot new initiatives	Use grassroots approach to convey the value and importance of assessment	Not integrated into daily practice
Leadership	- Seek more active student involvement - Pay constant attention to the use of data in planning for the future	Require new course/program to have learning outcomes and assessment for curriculum committee approval	Limited or lack of experience in data collection and analysis
Use of assessment data	- Provide support and data reporting software - Hold annual meetings between departments and university to review assessment plans and use of data -Incorporate data in five-year program reviews -Create central repository for data collection and analysis	Tie budget requests to use of assessment data	- Limited use of data - Administration minimizes faculty involvement and control
Communication	- Encourage informal discussions between faculty from different disciplines - Maintain direct contact with student organizations - Publish assessment newsletter (twice a semester) - Conduct focus groups with students on more involvement	- Offer workshops - Build relationships with key actors - Reduce apprehension and confusion about assessment - Showcase examples of successful assessment projects	Share ideas on approaches at the individual department level

Note. Reprinted from Ndoye, A., & Parker, M. A. (2010). Creating and sustaining a culture of assessment. Planning for Higher Education. Society for College and University Planning. January – March, 2010. Reprinted with permission.

From Ndoye and Parker's matrix, some common themes emerge relative to silo integration in the pursuit of developing a culture of assessment. Ndoye and Parker cite participation and involvement as factors facilitating silo integration. This includes

holding cross-departmental meetings, enabling discussions between faculty and generally follows the principle of incorporation (Ndoye & Parker, 2010) that is incorporation of existing structures and people. Ndoye and Parker support the integration of people vis a vis forums for communication and participation in joint projects as a method for silo deconstruction. This follows their motto that the more involvement people have with one another the more relationships will form. Ndoye and Parker also favor centralization and centralized planning as they cite that this tends to lead to clarity and consistency with respect to top-down decision-making.

Cross walking the extracted themes from Ndoye and Parker's (2010) study and those silo-based infrastructure non-collaboration costs of Wilcock (2013) I can visually represent the dichotomy between the negative of silo-based infrastructure as compared to the positives of an integrated infrastructure. Encapsulated in Wilcock's compilation of the negative attributes of silos were reflected the concerns voiced by Andrade (2011). Thus I have used Wilcock's list as it covered, by topic, the concerns expressed by other authors presented in this literature review. Similarly, Ndoye and Parker provided a positive attribute list that covered other researcher's positive attributes and generally presented as a more holistic and exhaustive compilation.

Potential Silo Integration Structures

Silo integration is not something that can happen without sufficient resources and adequate support structures. In this section I will attempt to offer evidence supporting the need for a centralized and cross-institutionalized (Kezar, 2005) team of professionals to serve as the core of the assessment & data analysis/utilization silo integration study. Wilcock's (2013) twelve non-collaboration costs have been presented as a rationale for

connecting disconnected employees around a shared purpose through structural reengineering. Deconstructing silos through structural and cultural reengineering should mitigate Wilcock's non-collaboration costs whilst simultaneously reinforcing the positive attributes of silo integration as evidenced by Ndoye and Parker (2010). In carrying out this research, I explored potential integration structural models to determine the optimal structural solution for this study.

Of the myriad structural models that exist for teams in the higher education discourse, I have selected three for deeper exploration due to their applicability for higher education assessment efforts in particular: Professional Learning Communities (PLCs), Evidence-Based Inquiry Councils (EBICs) and Data Teams (DTs). In the sections that follow, I will explore each structure examining its characteristics and applicability for use in this study.

Professional Learning Communities

DuFour and Eaker (1998), present six PLC characteristics: shared mission, collective inquiry, collaboration, action oriented, continuous improvement, and results oriented. The preceding evolution of committees, workgroups, task forces, and by and large institutions of higher learning in general, typically lack some of these characteristics, which may negatively affect institutional effectiveness (DuFour & Eaker, 1988). I will refer to structures other than PLCs as workgroups hereafter. Workgroups are typically led by one person with whom the final decision-making authority rests. The other members are typically seen as worker resources. This is in contrast to the collaborative approach used in PLCs. "People who engage in collaborative team learning are able to learn from one another, thus creating momentum to fuel continued

improvement" (DuFour & Eaker, 1998, p. 26.) This lateral transmission of learning produces stronger individuals who ultimately mesh to form stronger groups and stronger organizations. On the surface both workgroups and PLCs have collaborators. People are either voluntarily serving or assigned to a group with a seemingly shared mission. However, this commonality ends once we get past surface assumptions and examine individual motives and hierarchical structures. Another difference between PLCs and workgroups lies within the drive for change, or what DuFour and Eaker, refers to as group inquiry (1998, p. 25). A PLC is a group of change agents. They are "relentless in questioning the status quo, seeking new methods, testing those methods, and then reflecting on the results" (DuFour & Eaker, 1998, p. 25). Workgroups are not always vested in change. They are sometimes open to the idea and sometimes not depending on, once again, individual motives.

One other differentiating factor between workgroups and PLCs is that of action and results. Workgroups typically espouse values of action. However, their theories in use (Schon, 1983) often fail to live up to the espoused expectations. PLCs, conversely, endeavor to hold true to their action-orientation, if abiding by research-based practices of PLCs. They pilot, beta-test, and trial their hypotheses (DuFour & Eaker, 1998). They dwell on results, and reflect those results into a continuous improvement cycle. It is not uncommon to find the finished products of workgroups; by contrast, acting as dust covers for bookshelves.

Data Teams

Kekahio and Baker (2013) label teams dedicated to data interpretation and analysis (p. 1) as data teams. These teams are typically organized as professional learning communities with the focus on monitoring institutional performance relative to an established set of learning outcomes. These teams also support coordinating data-informed responses or data-driven decision making (Kekahio & Baker, 2013, p.1). Kekahio and Baker further portend that data teams can either be diverse, or contain representation from a wide array of institutional areas or they can homogeneous representing a single discipline or institutional unit. The reflection between silo-based teams and integrated teams is visible in this dichotomous classification. Kekahio and Baker (2013) provide a framework for managing data teams which include the following steps (p.2):

1. *Setting the stage.* What question is to be addressed in this data-informed conversation? What information is needed to answer the question? Is the information available?
2. *Examining the data.* What patterns do the data reveal, or what "snapshot" observations can be made about the question?
3. *Understanding the findings.* What are the possible causes for the patterns?
4. *Developing an action plan.* How can a data team create an effective plan for addressing the issue?
5. *Monitoring progress and measuring success.* How can a data team know whether progress is being made on the issue?

These five steps will be merged with the process stages of the other two explored models i.e., PLCs and EBICs and serve as the process foundation of the work of the Professional Assessment Community as detailed in Chapters one and three.

In addition to the process-oriented framework for managing data teams, Kekahio and Baker (2013) also provide a matrix of data typologies and examples. Kekahio and Baker's data classifications will be applied to influence the development and operational principles of the Professional Assessment Community at Mountain State University. Specifically the classifications will be used to serve as a framework for how the Professional Assessment Community classifies data for the purposes of operationalization in support of continuous program improvement. Data will be categorized as demographic, perceptual, performance, or program. Whilst student outcomes assessment data would typically fall within the performance categorization, there are other types of assessment data, e.g., demographics, perceptual and program, that relate, or at least contextualize, how the group analyzes assessment data.

Evidence-Based Inquiry Councils

Dowd and Tong (2007) propose the development of evidence-based inquiry councils (EBIC) as a core component of a comprehensive system of accountability aimed at integrating knowledge, process and outcomes to increase educational effectiveness. (p. 58). Dowd and Tong further assert that EBICs are unique in nature via the integration of scholarship with a focus on institutional resource allocation, processes, and student learning outcomes. Quoting Dowd and Tong further, "The evidence-based inquiry councils are intended to capitalize on existing features of assessment and accreditation systems, such as self-studies and campus review teams, in support of accountability

goals" (p. 58). The linkage to assessment-related activities inherent in Dowd and Tong's work serves as the linkage between their silo-integration design and this study. EBICs are, according to Dowd and Tong, focused on two aspects of organizational dysfunction: (1) a dearth of strategic execution relative to what systems and processes prove effective in a variety of higher education institutions (p. 58) as well as (2) serving as a mechanism to adopt and implement effectively best practice models. Put succinctly, the purpose of an EBIC is to understand how, why, and, when optimal educational practices exist (Dowd & Tong, 2007, p.61).

Dowd and Tong's (2007) EBIC model consists of a four-part sequence of activities beginning with the formation of the council and a call for participation and proposals. During this phase, the EBIC is constituted with academic and evaluation researchers who will serve as evaluators and facilitators. Phase two, entitled framing the problem by Dowd and Tong begins with an analysis of the status quo relative to current practices, resource allocation processes, course and program level assessment data, a cultural self-inquiry (p. 92), cross-institutional benchmarking (p. 92) and a compare/contrast effort between expected vs. actual results. Phase three, according to Dowd and Tong is the portion of the process that engages intervention and adoption of new or revised processes. And lastly, phase four, concludes the process with a summary evaluation post implementation to ascertain or evidence change.

Of the three potential integration structures discussed in this literature review, I believe that a merger of ideas and characteristics may prove to be the optimal solution for the professional assessment community used in this research study. Drawing from all three models, Figure 8 reflects the components of each structure and the horizontal

alignment of those components that will serve as the foundation for the professional assessment community adjacent to a rationale for each component.

Figure 8

Component Comparison of Higher Education Team Structures with Rationale for Study Selection

<table>
<tr><th>Rationale</th><th>PLCs
DuFour & Eaker., 1998</th><th>DTs
Kekahio & Baker, 2013</th><th>EBICs
Dowd & Tong, 2007</th></tr>
<tr><td>Common to all three structures is the initial PAC work of understanding the common mission and forming the group itself.</td><td>Shared Mission</td><td>Stage 1: Setting the Stage</td><td>Formation</td></tr>
<tr><td>Common to all three structures is the inquiry portion during which we will frame the problem, gather and analyze data and draw actionable conclusions.</td><td>Collective Inquiry</td><td>Stage 2: Examining the Data
Stage 3: Understanding the Findings</td><td>Problem Framing</td></tr>
<tr><td rowspan="3">Common to all three structures is the notion of action plan development, execution, and postmortem analysis.</td><td>Action Orientation</td><td>Stage 4: Developing an Action Plan</td><td rowspan="2">Intervention and New Process Adoption</td></tr>
<tr><td>Continuous Improvement</td><td rowspan="2">Stage 5: Monitoring Progress and Measuring Success</td></tr>
<tr><td>Results Orientation</td><td>Summary Evaluation</td></tr>
</table>

Figure 8 showcases the framework used for the Professional Assessment Community.

Structural Efficacy

The efficacy of professional learning communities is difficult to measure. This challenge stems from the circumstances in which the PLC was designed and deployed and the unique characteristics of those who participate and the organizations to which they belong. There have been, however, studies conducted which demonstrate the efficacy of PLCs. One of those studies was conducted by Prenger, Poortman and Handelzalts (2019). Prenger et al., focused on deploying a networked PLC between 23 different schools in the Netherlands. Their results showed a positive impact on teacher perceived satisfaction with respect to attitude, skill and knowledge acquisition and sharing, and a general perceived enhancement to their ability to translate newly acquired knowledge and skills to their own practice.

In another study related to standards-based instructional teacher efficacy through a PLC model, Lakshman et al., (2010) a three-year long PLC deployed at the K-12 level had positive impacts on teacher efficacy and the implementation of a reformed standards-based science curriculum. This study, similar to Prenger et al., (2019) cited an increase in knowledge acquisition through shared transfer as a key derivative of the use of the PLC model. It should be noted that in Lakshman's et al., (2010) study, the expected outcomes in student learning did not occur though self-perceived teacher efficacy did increase.

Within this proposed study, I have reviewed the literature on professional learning communities from a theoretical and design perspective as well as some examples of PLCs being used in research. Additionally, I have combined two other structural forms, including data teams and evidence based inquiry councils with PLCs based upon each

structures components and how I see them applying to the proposed research study at Mountain State University. These three structures have similar qualities though evidence based inquiry councils (Dowd & Tong, 2007) also focus on process intervention and new process adoption which is germane to my proposed study. Additionally, the iterative nature of Kekahio and Baker's (2013) evidence based inquiry council model aligns with the overarching action research strategy (Elliott, 1991) guiding this study.

Informed Team Action Planning

Sagor (2010) offers a model of using what he calls informed theory to drive action within the action research strategy of inquiry. Through this model Sagor calls for the professional learning community to begin by reviewing the pre-intervention theories (2010, p. 124) with the PAC members. The last step in Sagor's process is to revise the initial theories based upon the findings, which occurred with the PAC membership during our results roundtable discussions. Elliott's (1991) influence here made this an iterative process.

Sagor's (2010) five habits of inquiry (p. 142) provided a framework for strengthening the PAC's efforts. These include agreeing upon a share vision of success, defining theories of action, purposeful data collection through action research, collaborative data analyses, and using informed team action planning.

Three Elements of Effective Integrated Structures

Within this study I have incorporated Kezar's (2005) structural integration research conclusions as they provide an additional layer of logistical infrastructure atop the process-oriented work described earlier in this section. Kezar developed eight features of organizational collaboration through a study conducted of higher educational

institutions engaged in integration and collaboration efforts. These eight features can help organize educational institutions toward more effective collaboration (Kezar, 2005). Of the eight features, Kezar's third item entitled *Integrate Structures* offers both additional rationale for silo integration and the need for this study as well as some practical and logistical advice. Kezar states that gleaning an understanding of structures is the key to ensuring collaboration occurs and integrating that which is siloed. (p. 54). Kezar then goes on to list three structural elements that support the integration of silos toward the goal of sustained collaboration; a centralized core responsible for stimulating collaboration, cross-divisional/departmental institutes and centers, and lastly new or reconfigured technological systems supporting collaboration. In the next section I will briefly explore each of these three elements and conclude by overlaying them with the process-oriented structure I have detailed earlier in this section.

Cross-Institutional Teams

The first of Kezar's (2005) integrating structural elements is that of installing a centralized unit responsible, sometimes referred to as a cross-institutional (p. 54) unit focused around a specific institutional task. Kezar cites examples of these tasks as being related to assessment, service-learning, or technology (p. 54). Kezar defines the focus of this centralized unit as that of ensuring cross-institutional collaboration relative to the topic of the team and typically reporting to a high-level academic official such as the provost. Kezar's research evidences myriad rationale for participation on such teams as the clear priority of the work, due to institutional support as well as the visibility of working on a team that interconnects multiple units and reports to the highest institutional echelons.

Cross-Campus Institutes

Kezar (2005) portends that physical or digital centers or institutes serve a critical purpose in silo integration, i.e., they represent physicality, even if only a virtual one, where ideas and data can be shared and discussed. Additionally, because these centers are cross-institutional, they are highly visible and that carries with it, according to Kezar's study, a desire for participation leading toward multiple layers, vertical and horizontal, of collaboration.

Systems & Technology

Citing the need for infrastructure of a technological nature, Kezar (2005) offers her third critical component of fostering effective and sustained collaboration i.e., computer systems capable of tracking and managing research costs, joint projects et al. The rationale offered by Kezar for this aspect is one of parity, i.e., that this type of cross-institutional collaboration should not be solely in-addition to one's normal duties but a part thereof.

Overlapping Process and Logistical Structures

Integrating PLCs (Dufour & Eaker, 1988), DTs, (Kekahio & Baker, 2013) and EBICs (Dowd & Tong, 2007) has provided a process-oriented framework for the professional assessment community proposal at Mountain State University. As seen in Figure 9, the process will consist of three distinct phases, which represent a merger of the three structural models explored: formation, collective inquiry, and action execution / monitoring. Leveraging the work of Kezar (2005) the professional assessment community's composition will include high-level academic administrators within the division of Academic Affairs. Adding to this matrix the data classifications provided by

Kekahio and Baker (2013), the structural, both from a human resource capacity and that of data structures, as well as some of the logistical parameters (Kezar, 2005) come to form the process and structural pillars of the proposed professional assessment community.

Summary

Middaugh (2010, p.1) stated, "as long as graduates were produced…with knowledge and skill required by business, industry, and government, there were few questions as to how money was being spent. These were the halcyon days for higher education." Middaugh (2010) was describing higher education as it existed post World War II and through the 1970s. In 1980, the environment surrounding higher education began to change (Christiansen & Eyring, 2011; Middaugh, 2010) and more focus and attention was being paid to accountability as it exists in its various forms e.g., fiscal, non-fiscal resources, etc. During this time period American higher education saw waxing and waning attention to topical areas including but not limited to: diversity, admissions processes, for-profit recruitment tactics, accreditation legitimacy concerns, and student outcomes assessment (Middaugh, 2010). The latter topic has occupied higher education for at least ten years (Middaugh, 2010) as the salient issue for colleges and universities in existence today.

The proverbial closing the loop is a concept not unfamiliar to any college or university (Banta & Blaich, 2011). And though an abundance of research, and perhaps even more technological solutions and business providers thereof exist to support the endeavor of academic assessment, few have addressed the intra-institutional infrastructure issues presented within this literature. With respect to infrastructure, Brown

(2017) supports the theory behind the existence of a dichotomous world inside modern American higher education, relative to assessment structures. Specifically he (Brown, 2017) points towards integrated models and those that are siloed as representative of these two worlds.

This study draws upon the works of Brown, 2017; Ndoye and Parker, 2010; Wilcock, 2013; DuFour and Eaker, 1988; Dowd and Tong, 2007; Kekahio and Baker, 2013; and Kezar (2005) when planning for and ultimately operationalizing the professional assessment community at Mountain State University bridging institutional and departmental gaps due to existing silos which has led to a more collaborative and meaningful assessment process. Chapter Three will focus on the methodology I used for this intra-institutional assessment silo integration study.

Chapter 3

Methodology

The purpose of this action research study is to use the experiences and perceptions (Stringer, 2007) of academic administrators at Mountain State University to enhance the closing of the loop (Banta & Blaich, 2011; Ewell, 2001) assessment process. The goals of the professional assessment community (PAC), created and implemented, within this study will be to try to generate awareness and ultimately improve the integration between academic schools as they analyze, interpret, and use programmatic outcomes assessment data for program improvement. I have labeled this community of interest as a professional assessment community (PAC) and will refer to it in this manner through this study. The overarching aim of this study was to disrupt the negative aspects of silo-based decision-making. A secondary purpose of the study was to stimulate the beginnings of a culture of assessment (Banta & Palomba, 2015; Ickes & Flowers, 2014) at Mountain State University. The study provided a best practices model for Mountain State University relative to collaboration around assessment data analyses and closing-the-loop (Banta & Blaich, 2011; Ewell, 2001) change processes via a professional assessment community with broad scope.

The overarching principle behind my choice of the action research methodology stems from how action research involves practitioners conducting systematic inquiry in order to improve their own practice (Koshy, Koshy, &Waterman, 2010). This systematic inquiry has the potential to enhance the working environment of both the practitioner as well as those who participate in the study. Moreover, action research is context-bound and the method itself influenced by contextually-relevant issues visible within a specific

work environment (Elliott, 2005). Action research offers the researcher the benefit of "methodological pluralism" (Guiffrida et al., 2011, p. 283) allowing for the selection of context-appropriate pragmatic methods that best help to answer the research questions. Additionally, and reflected in my own worldview of praxis, action research focuses on solution generation for practical problems and the empowerment of practitioners (Meyer, 2000; Reason & Bradbury, 2001). I represent a practitioner in the field of learning outcomes assessment at Mountain State University and as such I am keenly interested in a solutions-oriented approach via systematic inquiry.

This action research plan was conducted over the course of three full research cycles and a pre-cycle phase. I followed Elliott's (1991) cyclical action research model. When comparing and contrasting three action research models i.e., Kemmis and McTaggart (2000), O'Leary (2004) and Elliott, I found all three contained similar plan-act-observe-reflect stages, however Elliott's model also includes a reconnaissance phase. This will be a critical first step as this study needs to be informed about the current context or perception of the silo-based assessment structure in existence at Mountain State University. Elliott's model continues the reconnaissance component through each cycle. Additionally, Elliott's model parcels the action stage into the development of a general plan followed by discrete action steps. The nature of assessment and the use of its data is itself iterative, which aligns with Elliott's model in this regard.

Action Research Rationale and Assumptions

Engagement in action research aims to catalyze localized community improvement through participation and interaction between the researcher and the research participants (Riel, 2010). At Mountain State University, the research participants

include individual school's staff operating within silos under the umbrella of the division of Academic Affairs. These silo's, operating almost independently of one another, prohibit true collaboration and community culture from existing within the larger divisional structure.

Worldview

Guba and Lincoln (1994) stress the importance if the researcher considering his or her philosophical worldview when designing and conducting any research study. Creswell (2009) reinforces the need for the researcher to first understand and second to position their research study within the paradigm of their philosophical worldview. Creswell offers three worldviews that are common in modern research studies: positivist, interpretivist, and participatory also referred to as praxis. Positivism is based (Creswell, 2009) on the idea that knowledge is obtained through scientific measurement and observation and generally that truth exists in the ethos and as such is common in qualitative research methods. Within positivist-influenced research, the notion of objectivity is relegated away from the researcher toward a global truth or understanding. Interpretivism is popular with qualitative methods as the basis of said methods are socially constructed in nature (Koshy et al., 2010). Interpretivism, conversely, situates objectivity within the researcher themselves. The third paradigm, entitled participatory or praxis, is unlike either positivism or interpretivism in that it is "context bound" (Koshy et al., 2010, p. 13). The paradigm of praxis is localized, and research being influenced by the praxis worldview is intended to change situations locally (Koshy et al., 2010). Within this worldview, which is the worldview that will guide my research study, I have endeavored to garner information that can be applied pragmatically as a solution to a

localized (Stringer & Genat, 2004), i.e., at Mountain State University, problem within the scope of general work that I perform at the University.

Ontology

The socially constructed reality of the participants of this research study, as well as my own, influence this study at the onset, during the course of data collection and through the dissemination of my results (Koshy et al., 2010). Given the ties to student learning outcomes assessment, a process in which higher education institutions typically put forth great effort to gain objectivity, and eliminate multiple realities, the acknowledgement of ontological assumptions for all involved with this study helped to lend contextual clarity to the project and ultimately its outcome.

Epistemology

Mills (2003) portends that action research is local and personal research that primarily affects students and our professional lives almost exclusively with traces of affect appearing here or there. Said differently, action research strikes a chord for those who engage in the process. Therefore, it makes logical sense to use our own experiences and worldviews to interpret the data (Mills, 2003). Creswell (2009) purports that no two worldviews are perfectly similar. Along these lines, no two epistemologies are perfectly similar (Koshy et al., 2010). Knowing this, I understand and accept that my worldview may influence data interpretation in a unilateral way thus skewing the data. Stringer (2007) goes to great lengths to teach the researcher to keep their bias in check during the research process, and more importantly, during the analysis and interpretation stages. Therefore to recognize my bias, I have applied Mills's approach of couching my interpretive statements within, and based upon, my own experiences to the best of my

ability. This tactic was similarly be deployed as the research participants offered their own perceptions and observations about this research project. I have engaged my peers in this interpretation-qualification effort (Mills, 2003) and asked that they provide constructive and critical feedback on the data also situated with their own worldview and personal epistemological viewpoint.

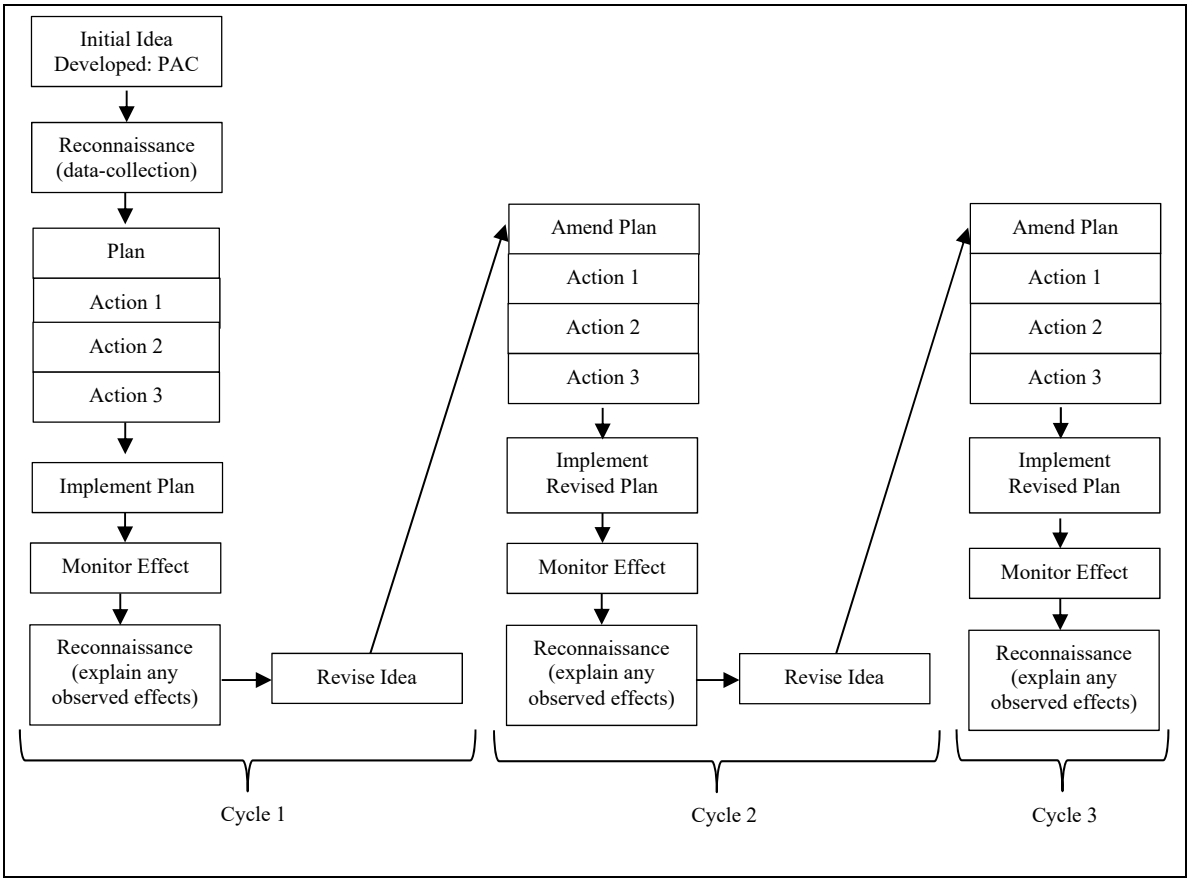
Research Design

Research Cycles

Participatory action research typically follows a three-cycle approach (Koshy et al., 2010; and Stringer, 2007). This study also followed a three-cycle approach using Elliott's action research model (1991) as a framework. Figure 9 depicts the three research cycles developed for this study.

Figure 9

Visual Representation of Three-Cycle Action Research Project



In Figure 9 the project began in cycle 1 with the initial idea developed. The initial idea for this study was the development and implementation of the professional assessment community (PAC). Cycle 1 reconnaissance or pre-cycle data collection then commenced. Within the pre-cycle 1 Reconnaissance, the purpose of the research questions were to both establish whether or not, and to what extent, research participants believe silos do exist relative to assessment data and its use. This established the groundwork for why the professional assessment community should be implemented. In addition, question PCI-RQ2 focuses on the linking of institutional logics (Brown, 2017; Thornton & Ocasio,

1999), as discussed in Chapter 2 with the current and historical evolution of assessment culture and assessment operationalization at Mountain State University. Additionally, I plan to and did establish a baseline of awareness perception around assessment at Mountain State University through a questionnaire developed by the Middle States Commission on Higher Education (MSCHE), one of the six regional accrediting bodies authorized by the United States Department of Education. The questionnaire entitled, *Rubric for Evaluating Institutional Student Learning Assessment Processes* is provided by MSCHE as a tool that accredited institutions may use internally to gauge the level of awareness of student learning assessment processes and can be Appendix A.

The instrument provided a baseline of student learning assessment process awareness which influenced the development and operations of the PAC. The MSCHE instrument was also used in a pre-test/post-test fashion as one measure of impact of the work of the PAC. Continuing in cycle 1, the general plan including the composition, operating procedures and timeline will be established and implemented. The data collected through cycle one yielded revisions to the general idea, which were implemented in cycle 2. Cycle 2 consisted of applying the modified assessment and use-of-results plan, taking into consideration the learning from cycle 1 as well as best practice examples, in the area of assessment and use-of-results, stemming from Chapter 2 of this study. The PAC continued its mission, under modified principles, and engaged in idea revision once again based on the data provided in cycle 2. Cycle three's focus allowed us to reveal advantages and disadvantages between siloed and integrated assessment and use-of-results efforts. In addition, cycle three produced actionable ideas for sustainability

of the modified process. The final reconnaissance in cycle 3 was intended serve as the conclusion of the research study.

Following Elliott's (1991) action research model, research cycles are intended to build upon one another in a scaffolding manner. Additionally, this process is intended to be collaborative in nature. Each round of reconnaissance, or data collection, included an analysis and interpretation phase followed by the dissemination of results to the PAC and accompanied by composition / operations modifications for reimplementation of the PAC. I convened a "results roundtable" to reflect on the data (Schon, 1983), and to discuss and determine the next course of action during the design & implementation phases of each research cycle. In the spirit of participatory action research (Stringer, 2007) the participants of the study were the key players of the roundtable discussion. As described above, the PAC is perhaps the most important piece of this study as it brings University officials face-to-face with the realities of a meaningful data-driven decision-making process and culture. Additionally, the PAC facilitated a very public and very real experiential reflection opportunity (Altrichter et al., 2012) among the participants. The following action research questions served as the focal point of this study and are broken down by research cycle:

Pre-Cycle Reconnaissance

PC – RQ1: How do academic administrators at Mountain State University describe the assessment process's use-of-results efforts as they relate to being integrated or siloed?

PC – RQ2: How do academic administrators describe the pervasiveness of assessment-related collaborative decision-making?

PC – RQ3: How are institutional logics reflected in the evolution of assessment's use-of-

results process and culture?

Cycle One

PAC Implementation, Observation & Modification

CI – RQ1: How has collaboration around the use-of-results assessment model changed?

CI – RQ2: What redundant use-of-results assessment activities have been identified and removed?

Cycle Two

PAC Observation & Modification

CII – RQ1: How have the roles and responsibilities of academic administrators changed in the moved towards an integrated use-of-results assessment model?

CII – RQ2: What impact has the PAC had on the closing-the-loop process?

Cycle Three

PAC Observation & Sustainability

CIII – RQ1: How has the integrated model shaped the University's culture of assessment?

CIII – RQ2: What contributes to the sustainability of the integrated assessment use of results model?

Participants & Sampling

In this study I have chosen to use criterion-based purposeful sampling (Onwuegbuzie & Collins, 2007) within Mountain State University. Within this method there were two sets of group participant criteria included within this study. The first group entitled *All Academic Affairs Staff* included all employees at Mountain State University employed within the Academic Affairs division. Appendix B reflects the

organizational structure of the Academic Affairs Division at Mountain State University. This was the only criterion used for sampling for this group. The MSCHE questionnaire was provided to all 80 employees within Mountain State University's Academic Affairs Division (Appendix B), once at the onset of this research study in the pre-cycle and again in cycle three.

The second group of participants is the PAC membership which consisted of six participants. Presently, Mountain State University has a formal structure entitled the Learning Outcomes Assessment Committee (LOAC). The LOAC is comprised of the following employees: Assistant Provost of Learning Outcomes (myself), two rotating mentor representatives, one representative from each academic school and one instructional designer. The criterion for the PAC was those individuals who presently serve on the LOAC. The rationale behind this decision is that this group is entrusted with the overall direction of the assessment and use-of-results process at Mountain State University.

Data Collection

This action research study included both quantitative and qualitative data elements. Figure 10 aims to align each data collection cycle with the quantitative or qualitative method and a general focus of that time period.

Figure 10

Research Cycle Foci Overview

Cycle	Focus	Instrument	Participants
Pre-Cycle Reconnaissance	Exploration of current perceptions.	MSCHE Questionnaire Semi-Structured Individual Interviews	All Academic Affairs Staff (includes PAC membership) PAC Membership
I	Observation of change on collaboration and efficiency.	Group Interview	PAC Membership
II	Observation of change on human roles, shared learning and process.	Group Interview	PAC Membership
III	Observation of change on culture of assessment and sustainability.	Group Interview MSCHE Questionnaire	PAC Membership All Academic Affairs Staff (includes PAC membership)

With the focus of each action research cycle now in view from Figure 10, I have cross-walked, in a more detailed fashion, all research questions with the specific data collection methods and data analysis techniques in Appendix C.

Survey Research Strategies

The MSCHE questionnaire will serve as the primary quantitative data collection instrument for my study. This survey will also serve as a pre and posttest evidencing if the introduction and implementation of the PAC has made an impact in peripheral perceptions. In Appendix C I have cross-walked the MSCHE questions with my research cycles and specific questions to evidence alignment. In addition, during the distribution phase of the MSCHE questionnaire, I have included a statement of clarification that may help research participants contextualize their "unit" which is the terminology found within the MSCHE questionnaire. For the purposes of this survey, "unit" will be defined, and conveyed to research participants, as the University department in which they are currently an employee.

Qualitative Research Strategies

Semi-Structured and Group Interviews. The qualitative strategy protocols found in Appendices D, E.1., E.2. and E.3., deployed within this study began with semi-structured interviews (Rubin & Rubin, 2012) with each PAC member during the pre-cycle reconnaissance phase. During this phase I presented the overall research problem to each PAC member, see Appendix F, which focuses on the lack of integration within Mountain State University's assessment and use-of-results process. It is possible that the siloed nature of the institution's processes and human resources may also play a factor in the beginning of the semi-structured interview (Rubin & Rubin, 2012). Within each semi-structured interview (Rubin & Rubin, 2012), the following topics were explored as a starting point: silo's, assessment data and use-of-results processes and integration. However, I have also used the results from the pre-cycle survey to add additional topics

to the pre-cycle semi-structured interviews (Rubin & Rubin, 2012) with PAC members, evolving the interview questions in relation to data collected, analyzed and reflected upon in prior research cycles. I deployed techniques such as follow-up questions, example requests, unpacking of the meaning of certain responses, requests for more details and reflection as necessary.

In cycles one, two and three, group interviews were used as the primary data source for this portion of the study. Each group interview began with a reflection on the prior PAC meeting during which the PAC will be presented with best-practice models based on literature, related to the use of assessment results in modern higher education as well as a discussion on how Mountain State University's processes mirror or diverge from the principles of these best practices. The group interviews also explored the action plans developed by the PAC during the prior meetings, how those action plans were implemented including an exploration of the PAC member's perceptions on the degree of success for each implemented action, and what perceptions the PAC members described as the resulting outcomes on process and culture.

The three-cycle nature of this project precipitated the need for the group interviews to follow a common format whilst allowing for topic divergence, which appeared as a naturally evolving occurrence as the PAC engaged in its work. Similar to the semi-structured interview (Rubin & Rubin, 2012) planned for the pre-cycle reconnaissance phase, I used the following probing techniques to follow up during group interview discussions: follow-up questions, example requests, unpacking of the meaning of certain responses, requests for more details and reflection. I used an audio recording

device for each semi-structured and group interview. The recordings were then transcribed for the purpose of data analysis.

Instrumentation

The first instrument used within this study was the MSCHE questionnaire seen in Appendix A. This tool has been prepared by the MSCHE, one of the six regional accrediting agencies recognized by the United States Department of Education. The MSCHE intends the questionnaire to be used as a self-assessment tool either in the spirit of continuous improvement or as a primer for an upcoming MSCHE self-study / on-site new or reaccreditation visit. I am using it as a pre and post test to determine if the work of the PAC has had an effect on the awareness of Mountain State University's outcomes assessment and use of results process perceived by employees within the Academic Affairs division. Some employees within the Academic Affairs division work with assessment data on a weekly basis but many others appear to use assessment data more infrequently and thus may not be as well versed in what Mountain State University's assessment process is or how results are used within the University. The nuances of the breadth of assessment data use is, itself, one of the aspects this study aimed to reveal.

Data Analysis and Interpretation

Onwuegbuzie and Johnson's (2006) inside-outside model was selected as the method by which quantitative and qualitative data collected in this study will relate to one another. This study was book-ended by identical quantitative data collection via the MSCHE survey. In between the survey distribution, I used a semi-structured interview (Rubin & Rubin, 2012) method with individual PAC members during the pre-cycle

reconnaissance phase. Then, in cycle's one, two and three, group interviews were also used with PAC members.

Quantitative Data

The MSCHE rubric / survey were distributed to all Mountain State University Academic Affairs employees during the pre-cycle reconnaissance as a pre-test to gauge awareness of multiple assessment and use-of-results processes. This rubric / survey was also used as a post-test following all three research cycles including multiple evolutions to Mountain State University's process around assessment and the use of assessment results through the PAC meetings and efforts. In order to analyze the rubric / survey results, I have assigned a numerical scale to the MSCHE rubric options available to research participants as such:

1 – No plans

2 – No evidence

3 – A few areas

4 – Some areas

5 – Most areas

6 – Everywhere

The collected rubric / survey data, following the numerical translation outlined above, was then presented using simple descriptive statistics within data tables. I have parsed out the MSCHE rubric / survey data differentiating between two groups, PAC members and non-PAC member. At the conclusion of the data collection phase and following the second round of MSCHE rubric / survey data collection, I have again display the data using descriptive statistics tables.

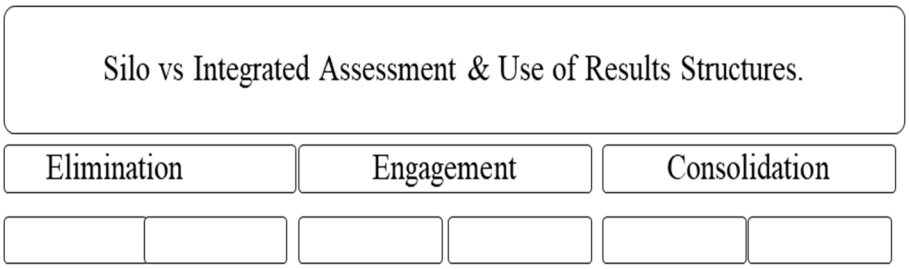
I have then compared the pre-cycle reconnaissance results to that of cycle three, using a paired t-test, thus testing whether the PAC initiative has had any impact upon their own awareness of assessment and use-of-results processes at Mountain State University in addition to whether those efforts have impacted the larger Academic Affairs audience.

Qualitative Data

One of Elliott's (1991) critical aspects to action research data analysis is the progression of the data over time. Elliott (1991) refers to this as the evolution of one's general ideas over time (p. 88). I have used Stringer's (2007) coding methodology for data analysis as a way to represent Elliott's general idea evolution (1991, p. 88) over time. Essentially, a new theme matrix, a sample of which can be seen in Figure 11, has been generated after each research cycle, and ultimately displayed adjacent to one another as a visual representation of idea evolution over time (Elliott, 1991). Stringer's method, which involves first reviewing the collected data, unitizing the data, categorizing and coding, theme identification, and reporting (2007). As such I have used Stringer's (2007) structural methodology to operationalize Elliott's (1991) data analysis need of showcasing an evolution through multiple cycles of action research.

Figure 11

Sample Theme Matrix



An initial review of the data allowed me to separate out the useful portion from the irrelevant portion (Stringer, 2007) through Stringer's approach of unitizing the data. I have redacted irrelevant comments and underline or collect the relevant pieces. These efforts all lead to the primary data organization effort of categorizing and coding. The initial categorizing was to mark each data unit with the relevant research question(s) they align with. Theme identification was used to analyze the qualitative aspects of the data in this study. The data, once gathered, coded and themed helped to fill in the theme levels for interpretation purposes.

A first cycle coding method was used for the semi-structured and group interviews (Rubin & Rubin, 2012) entitled process coding (Saldana, 2013). This was used to conduct a preliminary analysis of the data. Process coding, according to Saldana (2013), maintains an alias as action coding. Given the nature of the research project, as an action research study in line with the research methodological principles of Elliott (1991) whose model itself is a series of implementations and reimplementation's influenced by data analysis, and relative to the focus of the study itself, that of silo deconstruction, the action coding methodology appeared to be most apt. Using action coding, I have captured

each research participant's salient points and converted them into distinguishable action items. Throughout the process, process or action coding enabled abstract idea dissection into more digestible, and more clearly delineated snippets.

I then transitioned to focus coding (Saldana, 2009) as my second cycle coding method. This took place following each cycle of semi-structured and group interviews. Focus coding, according to Saldana (2013), links naturally to process coding via an identification of the overlap, disconnect, or aggregation of first cycle process codes. Focus coding (Saldana, 2009) aims to find frequent or important first-cycle codes to help develop the most important categories form the data. It is essentially a categorization and organization of first-cycle process codes (Saldana, 2009) into groupings that make sense based on frequency and significance. Focus coding is a coding method modified from the more traditional axial coding (Saldana, 2009). It is important to be aware, cites Saldana (2009), that categorizing exists along a spectrum of strong vs weak relevance and that the classification of belonging varies among first-cycle coding outputs. As I went about analyzing the data, this spectrum, and its potential for improper categorization, served as an important and ongoing consideration in my data categorization efforts. Coding is an ongoing effort, according to Saldana (2009). This action research study, through the use of Elliot's (1991) model is also itself cyclical. As such each action research cycle was coded, categorized, and themed within each action research cycle resulting in multiple coding and recoding efforts. Through these multiple cycles of coding and recoding I have sorted, emphasized, and homed in on the important aspects of the qualitative data set (Saldana, 2009). The purpose of these efforts was the generation of categories, themes and ideas that support meaning within the study.

Categorization of the first cycle process codes and second cycle focus codes was conducted in an attempt to elicit meaning from the data set. Categorizing is an effort at grouping and organizing the salient points found within the first and second cycle coding methods. Each category was identified through analyses and organization of first cycle codes into second cycle codes, and second cycle codes into categories. In much the same way that first cycle process codes were organized and grouped to form second cycle focus codes, focus coded were grouped and organized based on frequency of topic and significance to form categories. The act of recoding and re-categorizing across multiple cycles may help in ensuring the codes and categories accurately, to the best of my ability, capture the salient points conveyed by research participants. From these, now broader and more inclusive categories, another effort at grouping, now in conjunction with my own reflection on the data and method, gathered and used respectively within this study, was deployed to support the elicitation of themes from the generated categories. "A theme is an outcome of coding, categorization, and analytic reflection, not something that is, in itself, coded (Saldana, 2009, p.13). This thematic analysis is what Saldana (2009) refers to as not an act of coding itself whereby coding produces labels and words and themes are typically longer descriptors of codes and categories. These overarching themes are akin to what Elliott entitles (1991) general ideas (p.88).

Additionally, juxtaposing each visual representation of process codes, focus codes, categories and themes, adjacent to one another, I was able to visualize Elliott's (1991) general idea evolution (p.88) over time i.e., over the course of the research cycles. A codebook (Saldana, 2013) was developed to systematically track first and second cycle codes and to depict the hierarchical relationship between the two. These themes, viewed

as evolutionary over time, may reveal commonality of action from the PAC member's action statements and elucidate opportunities for change, based on research participant consensus.

As a vehicle for capturing and disseminating the evolution of data captured within this study, I will deploy Elliott's (1991) analytical memo methodology. Within this, I will prepare an analytical memo following each research cycle. These memos were distributed to the PAC members as a reflection of the ideas and perceptions expressed within the research cycle. Because the PAC will hold meetings within each cycle, the analytical memos were bifurcated into a collection of ideas and perceptions from the PAC meetings and then, subsequently a vehicle to report the outcome of the coding methodologies cited in this proposal. Elliott offers guidance relative to the types of information that should be captured in an analytical memo. These include, but are not limited to, new ways of viewing the research study as it emerges; emerging hypothesis to test further; collections of evidence for future compilation, actions decided upon and actions taken.

The research methods outlined in this paper were chosen deliberately due to their close-knit relationship with the action research method and in support of fostering an open and comfortable research environment. These methods follow primarily Elliott's (1991) evolutionary action research methodology using, at times, structural methods (Stringer, 2007) to operationalize Elliott's model. This research methodology works well in support of the overarching research topic and questions, which by their very nature are process and action oriented. Actions themselves, whether observed by deed or gleaned through interview and survey methods, may prove useful in understanding the changing

dynamic between silo's, fully integrated structures and the processes embedded within each format.

Interpretation

As Mills illustrates, action research is local and personal research (2003) that predominantly affects students and our professional lives almost exclusively with traces of affect appearing here or there. In other words, action research strikes a chord for those who engage in the process. Therefore, it may be appropriate to use our own experiences and worldviews to interpret the data (Mills, 2003). That being said, Creswell purports that no two worldviews are perfectly similar (2009). As such my worldview may influence the interpretation in a unilateral way thus skewing the data. Stringer (2007) goes to great lengths to teach the researcher to keep their bias in check during the research, and more importantly, during the analysis and interpretation stages. Therefore, to allow unbiased personal interpretation, I will apply Mill's approach of couching my interpretive statements within, and based upon, my own experiences (2003) and reflect on this effort at each step in the process. Additionally, I will engage PAC members in this same interpretation (Mills, 2003) and ask they provide constructive and critical feedback on the data.

Rigor

As stated above, the primary action research model used in the design of this study is Elliott's (1991). However, on the subject of trustworthiness, Elliott's model is being supplemented with that of Stringer (2007). The rationale for this supplementation is that Elliott does not provide clear direction relative to trustworthiness of a study but rather relies on other theorists primarily Maxwell on the topic of generalizability. In

addition, Elliott's close and almost exclusive focus on teacher education creates a gap relative to the purposes of this study. Below I will address each of Stringers (2007) rigor concepts, discuss data triangulation, as well as briefly touch upon Maxwell's concepts related to generalizability.

Credibility

This study contains within its design both individual interviews as well as group interviews. These techniques are classified, by Stringer (2007), as prolonged engagement (p.57) opportunities for research participants to gain a deep understanding of the research project's outcomes and ultimately toward trust of the process. One unique aspect of this research study is that I asked the participants, specifically the members of the PAC to observe and discuss their own perceptions but also querying them relative to the perceptions of others as this study is designed to gauge the efficacy of the PAC's influence on the broader Academic Affairs division. Stringer classifies this as persistent observation (p. 58). Each research cycle concludes with a group interview. This should allow for a debriefing (Stringer, 2007, p. 58) to occur and add to the overall credibility of the study through participant emotional response sharing.

Transferability

Stringer (2007) offers that action research studies are not typically transferable beyond the actual people involved and location of the study itself. For transferability to occur, there needs to be a clear and comprehensive contextual description of the study. This then allows others to judge the transferable nature of the research, its process and conclusions to other settings based on degrees of trust.

Because Elliott (1991) relies on Maxwell (1984) and following my own review of Maxwell's contributions, I believe it is important to convey those thoughts on transferability, which Maxwell labels generalizability. Though these are not typically synonymous terms, the context that Maxwell provides leads me to conclude that he does use them synonymously. Maxwell (1992) argues that internal generalizability differs from that of external generalizability via relative positioning of the conclusions for a specific group or beyond said specific group. Maxwell (1992) goes on to state that internal generalizability is more prevalent in qualitative research and the same for external generalizability and quantitative research. Within this study, the group per se is the represented by PAC members however the external group would consist of individuals still within the same organization, Mountain State University, and the same division, Academic Affairs, however they would be individuals not engaged in the day to day use of assessment data.

The nature of action research (Elliott, 1991; Stringer 2007) does not lend itself to direct transferability of a study's process or outcomes. Rather it aims to provide a unique study in parallel to a unique set of characteristics and serve the unique needs of Mountain State University. In an effort to contribute to the body of knowledge, this study is available for other scholars to review and determine, on their own, if process adoption is warranted given their own college or university setting and needs.

Dependability

Stringer (2007) argues in favor of the need for an inquiry review (p. 58), which takes the shape of a comprehensive reporting of the procedures that were followed following an action research study. The purpose of this task is to certify that the

methodological design conveyed in the research proposal was followed appropriately. I plan to complete such a review following each research cycle and to convey the outcome through a procedural memo.

Confirmability

In order to confirm that the research study is following espoused protocol, the procedural memo attests to how closely the researched followed the study's design, however tangible evidence supports the procedural memo plainly. As such, I will provide the audio recordings of each individual interview and group interview including a transcribed version. These will include the preface of each session in which research participants are apprised of the protocols. Additionally, I will provide the field notes from each PAC meeting including meeting minutes to support adherence to this study's design and protocol.

Triangulation

Elliott (1991), Stringer (2007), and Mills (2003) cite data triangulation as a critical factor in conducting quality action research. Elliott provides his definition, relative to this action research study, which contains the notion that triangulation is a more "general method for bringing different kinds of evidence into some relationship with each other so that they can be compared and contrasted (p. 82). The data collected from the pre-cycle reconnaissance MSCHE rubric / survey and the semi-structured interviews (Rubin & Rubin, 2012) will provide one triangulated cornerstone. The data collected through three cycles of group interviews will serve as the second triangulated data cornerstone. The final cornerstone data point was provided by the culminating cycle three MSCHE rubric / survey.

Through bi-directional sharing of analytical memos at each stage in the process of this action research project, I plan to not only triangulate the data but create a three-dimensional pyramid allowing for each research participant to be a keeper of accountability relative to the results of this study. Onwuegbuzie and Johnson's (2006) inside-outside approach appears to have some connection to the intent of preparing analytical memos during this cyclical research study as well as having influenced the participant sample. This research study begins with quantitative data collection, then experiences three rounds of qualitative data collection and culminates with a final round of quantitative data collection. Both the pre-cycle reconnaissance and the final questionnaire were used in parallel (Onwuegbuzie & Leech, 2004) alongside the three cycles of qualitative data collection. In addition, the quantitative data collected was contextualized and explained via the qualitative data. More specifically, the pre-cycle reconnaissance and final questionnaire instruments are identical, i.e., the MSCHE questionnaire. The participant selection for the questionnaire is intended to represent outsider's views on the assessment and use of results process at Mountain State University. The three cycles of qualitative data collection contain insider, i.e., PAC members as participants. Onwuegbuzie and Johnson's (2006, p. 57) legitimation typology for this study is therefore Inside-Outside with the following description:

> **Inside-Outside:** The extent to which the research accurately presents and appropriately uses the insider's view and the observer's views for purposes such as description and explanation.

Role of the Researcher

With respect for the primary goal of successful transition management, as seen in sustainability science (Wittmayer & Schapke, 2014), the researcher in action research studies such as this, must exercise cognizance of his or her role. These roles can include that of a change agent, knowledge manager, reflective and self-reflective scientist, and process facilitator (Wittmayer & Schapke, 2014, abstract). At the onset of this study, my role was that of Associate Provost for Learning Outcomes and I was responsible for the University's assessment efforts at the institutional and programmatic level. This responsibility included process efficacy of assessment and use of results and as such was inherently tied to this action research study. Following the data collection phase, I was promoted to Vice Provost though I maintained general responsibility for the same assessment efforts with additional staff resources being added to conduct the day to day assessment initiatives. The process-oriented approach proffered by Wittmayer & Schapke (2014) lends itself to this action research study as it is a process itself that the professional assessment community intends to enhance through the societal learning activity (Wittmayer & Schapke, 2014).

Transition management considers how participants can facilitate sustainable process transformations (Miller, 2013). The critical consideration in distinguishing knowledge-first approaches (Miller, 2013) from process-oriented approaches is the process itself through which knowledge is produced and ultimately applied (Wittmayer & Schapke, 2014). This study hinges on the process-oriented approach within which I, as the researcher, will facilitate the creation of a collaborative space through which the research participants will engage in joint knowledge production (Wittmayer & Schapke,

2014). In this collaboration space, I acting as the researcher, will endeavor to be a knowledge producer but not the sole actor in that regard. The other knowledge producers are the research participants, and as such I serve two roles, that of a knowledge producer myself and that of a sustainability facilitator. As described in this study, the research participants were provided with evidence-based best practices in assessment and use-of-results processes as part of Cycle 1 data collection. Acting as a curator of this knowledge, I will be contributing to the broader knowledge base of the professional assessment community. In addition, through helping to define and ultimately modify the operational principles of the PAC, I served in fulfilling the collaborative space facilitator role as well. Wittmayer & Schapke (2014) state that the creation and maintenance of the collaborative space is one of the primary activities of researchers in studies focusing on process-oriented approaches.

The collaborative space itself is one of communication and dialogue as well as participatory in nature (Wittmayer & Schapke, 2014). All situated within the context of the society, or in this case the academic affairs division at Mountain State University.

Ethical Considerations

Anticipation of ethical issues is a critical component for any research study (Creswell, 2009). The primary purpose of working through ethical considerations as part of the development of a research study is to ensure the safety, protection and trust needs of research participants are met (Israel & Hay, 2006). Ethical considerations are not single occurrence events within the context of a research project (Creswell, 2009). Rather they exist along a chronological continuum throughout the duration of the project. I have adapted Creswell's (2009) time-based ethical domains into the following areas for this

project: prior to beginning the study; beginning the study, data collection, analyzing & reporting data.

Prior to Study

In this phase I have considered the power dynamics between the researcher and the research participants including reporting lines and lines of implied authority. I have further considered the power dynamics between the research participants themselves. Though lines of reporting are present in the pre-cycle reconnaissance effort as well as research cycle three, the focus of those two cycles is more quantitative in nature thus reducing ethical issues relative to reporting line noise. Additionally, cycles one and two contain research participants who are relative equal in status with respect to organizational hierarchy as well as containing zero reporting line crossings.

Furthermore, the questions and relative content present within this study's instrumentation and the general nature of the research do not appear to pose a threat to issues of safety or well-being. In due course I will submit an application to Rowan University's IRB as well as the research site to ensure appropriate safeguards are in place, and to obtain authorization, for this study prior to commencement of the project.

Beginning the Study

During the beginning of the study and, explained through Chapters one and two of this dissertation, I have described an institutional process which, through siloed operations, is producing negative consequences for the organization. Ultimately, this research study may benefit its participants. Within the actual research cycles, the pre-cycle reconnaissance effort helped to support the need's assessment (Creswell, 2009) relative to this study. During cycle one, and with the formulation of the PAC, I will

disclose all aspects of this project to PAC members, increasing transparency for the hypothesized outcomes of this project. Of particular concern for me is the current culture in existence at Mountain State University around the use of assessment data and ensuring that this research project simultaneously respects said culture as well as facilitating cultural evolution with respect to optimal use-of-results processes.

Data Collection

Creswell (2009) cites several needs relative to data collection including developing and continuing a respect for the research location, disruption minimization, equal dispersion of benefits, avoiding deceit, and maintain a respect for power differentials. The nature of this study is such that regardless of the outcome of the study, I accept that behaviors around the assessment process and use-of-results may have been inherently altered by the observation itself. The design of this study has taken into consideration power imbalances and the constitution of the PAC is intentional in minimizing those imbalances, as the cross section of power represented by the PAC is fairly horizontal. Additionally, it is my hope that all PAC members are able to benefit from this study and potentially through a more optimized assessment and use-of-results process at Mountain State University.

Analyzing & Reporting Data

Among Creswell's (2009) considerations around ethics and the analysis/reporting of data, I believe it is the sharing of data, avoidance of groupthink, and the avoidance of biased reporting that are paramount with respect to this study. Efforts were made to ensure maximum transparency of positive and negative outcomes of this project in an effort to advance learning at Mountain State University among the PAC members and

with the Academic Affairs Division as a whole. Both individual and group interviews were conducted to help avoid groupthink. Additionally, the group interviews began with an understanding of confidentiality and an affirmation of participant openness and transparency. Participant positivity around the desire to create a better process facilitated more open and honest sharing.

Protection and anonymity of research participants represents an important consideration within this study. The potential exists for research participants to be identified either by name or by the statements made during the course of this study. In an effort to protect research participants, as well as to provide a research study environment in which they may express their opinions freely, I will obscure their names through pseudonyms within all of this study's documentation. However, anonymity may not be sufficient as there exists the possibility that individuals may be identified by statements they have made and which I have recorded or transcribed. As the researcher, I was cognizant of this possibility and attempt to screen comments, paraphrase, and aggregate ideas in a manner that ensures the safety, security and protection of the research participants.

Conclusion

The proposed method for this action research study draws heavily from Elliott's (1991) action research model. Elliott's model provides for a guiding framework for how to conduct action research steeped in the teacher education arena, which typically contains group meetings, action planning, and post-implementation reflection with educations (Elliott, 1991). Elliott's model therefore has both influenced the architecture of this study and served as a model through which I can implement the study and conduct

the business of the PAC. At times, however, Elliott's model does not provide sufficient operational guidance. In these areas, I have sought out the direction of established action researchers such as Mills (2003), Stringer (2007), Creswell (2009) and Onwuegbuzie and Johnson (2006) to fill identified gaps in the methodology. Ultimately, however Elliott's model remains the primary methodological model used for this study.

This study contains four cycles of action research beginning with a reconnaissance (Elliott, 1991) phase and then continuing onward through three more cycles of data collection. One nuance of Elliott's (1991) model is that it evolves through and between each research cycle. Institutional change occurs in tandem with these evolutions. Following the pre-cycle reconnaissance phase, the PAC held more meetings carrying out the intended purpose of silo integration relative to Mountain State University's assessment use-of-results processes. Data was collected from both meetings and post-meeting interviews and shared through analytical memos (Elliott, 1991) with the PAC. This will allow snapshots of ideas and perceptions of PAC members to be memorialized. Comparison of these analytical memos (Elliott, 1991) may produce a visual of the intended evolutions of this study and its outcomes.

Chapter 4

Findings

In Chapter Three I described the framework for this study using action research including the data collection tools that would be used. The purpose of this action research study was to leverage the experiences and perceptions (Stringer, 2007) of academic administrators at Mountain State University to enhance closing the loop (Banta & Blaich, 2011; Ewell, 2001) assessment processes and to begin the development of a silo integration strategy. The closing the loop process is sometimes referred to as the use of assessment results process (Banta & Blaich, 2011). A Professional Assessment Community (PAC) was established as a vehicle through which the use of assessment results processes, including participants own perceptions and experiences, would be explored and by whom action would be taken to further integrate the use of assessment results efforts at Mountain State University. The goals of the PAC was to try to generate awareness and ultimately improve the integration between academic schools et al. departments as they analyze, interpret, and use programmatic outcomes assessment data for program improvement.

The overarching aim of this study was to disrupt the negative aspects of silo-based decision-making and begin to form a model for silo integration. A secondary purpose of the study was to stimulate the beginnings of a culture of assessment (Banta & Palomba, 2015; Ickes & Flowers, 2014) at Mountain State University.

The goal of this chapter will be to present the findings stemming from this cyclical action research project. This study allows for the quantitative findings to inform an understanding as to whether the actions of the PAC directly or indirectly effected the

perceptions and awareness of the use of assessment results efforts within the Academic Affairs division of the University. This study also allows the qualitative strand to inform an understanding of the research problem and answers to the research questions through qualitative data analysis. In presenting the findings, cycle-specific themes have emerged through coding and analysis and these will be shared and explored relative to the major findings of this study. Additionally, a look at theme evolution over time (Elliott, 1991), has resulted in the development of a theme matrix. The themes are presented as sub-findings and inform the major findings found in this chapter.

This chapter is presented through a design that mirrors the evolutionary nature of this research study. This study contained four cycles of research beginning with the pre-cycle reconnaissance and continued with three additional cycles. From each cycle, I was able to synthesize a set of cycle-specific themes. During the analysis phase of my research, observing the change in themes through the course of four research cycles informed the major findings of this study. As such, in presenting the major findings it is critical to understand how they were derived. I have provided a visual aid to support this understanding of theme evolution over time (Elliott, 1991) and placed these at the beginning of each major finding section. Additionally, the quantitative aspects of this study will be discussed after the qualitative findings components. My pre-cycle/cycle three survey was designed to serve as a pre-test/post-test with the value emerging primarily through potential observation of change. Unlike the qualitative data in this study, the quantitative survey data were not intended to be part of the process of improvement.

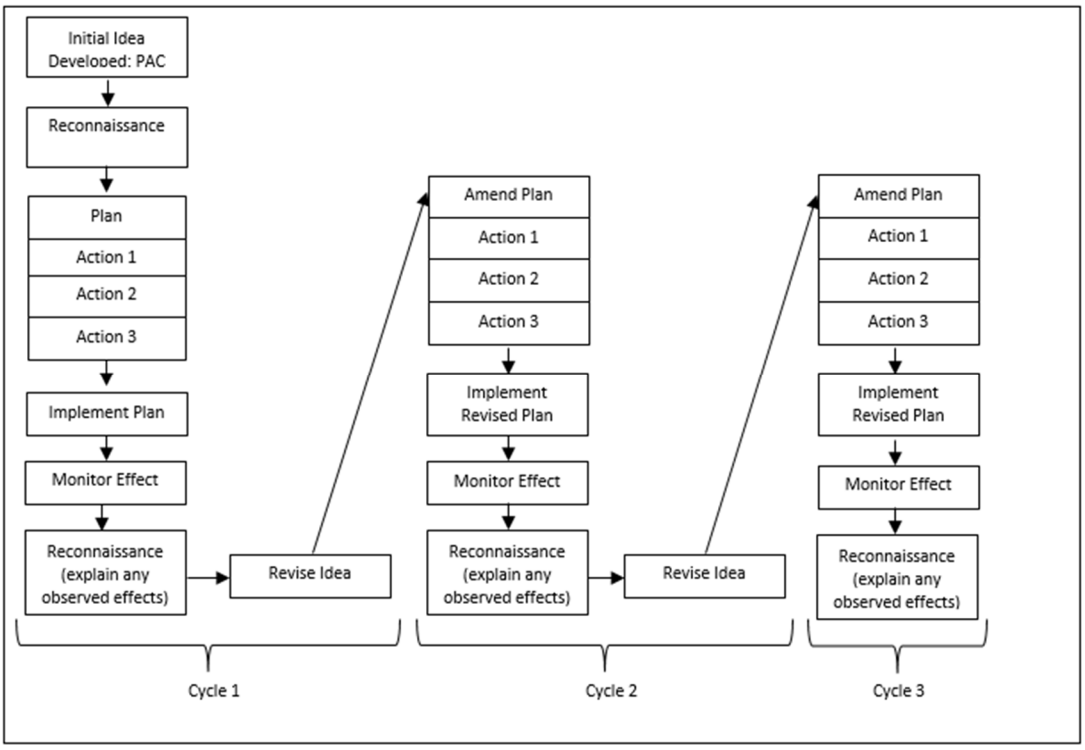
Action Research Introduction

Research Cycles

Participatory action research typically follows a three-cycle approach (Koshy et al., 2010; and Stringer, 2007). This study also followed a three-cycle approach using Elliott's action research model (1991) as a framework. The three-cycle approach includes a pre-cycle or reconnaissance phase (Elliott, 1991). Figure 12 depicts the three research cycles developed for this study.

Figure 12

Visual Representation of Three-Cycle Action Research Project



As seen in figure 12 the project began in cycle one with the PAC's initial idea being explored. The initial idea for this study is the development and implementation of

the professional assessment community (PAC). Within the pre-cycle reconnaissance, the purpose of the research questions was to both establish whether or not, and to what extent, research participants perceived silos existence relative to assessment data and use of results. These data will then be used to both establish the groundwork for why the professional assessment community should be implemented and to serve as a comparable via a pre-test / post-test methodology. Additionally, I attempted to establish a baseline of awareness and perception related to assessment processes at Mountain State University through a questionnaire developed by the Middle States Commission on Higher Education (MSCHE), one of the six regional accrediting bodies authorized by the United States Department of Education. The questionnaire entitled, *Rubric for Evaluating Institutional Student Learning Assessment Processes* is provided by MSCHE as a tool that accredited institutions may use internally to gauge the level of awareness of student learning assessment processes and can be Appendix A.

Research Questions

This study aimed to address the following action research questions, which have been broken down by research cycle:

Pre-cycle Reconnaissance

PC – RQ1: How do academic administrators at Mountain State University describe the assessment process's use-of-results efforts as they relate to being integrated or siloed?

PC – RQ2: How do academic administrators describe the pervasiveness of assessment-related collaborative decision-making?

PC – RQ3: How are institutional logics reflected in the evolution of assessment's use-of-results process and culture?

Cycle One

PAC Implementation, Observation & Modification

CI – RQ1: How has collaboration around the use-of-results assessment model changed?

CI – RQ2: What redundant use-of-results assessment activities have been identified and removed?

Cycle Two

PAC Observation & Modification

CII – RQ1: How have the roles and responsibilities of academic administrators changed in the moved towards an integrated use-of-results assessment model?

CII – RQ2: What impact has the PAC had on the closing-the-loop process?

Cycle Three

PAC Observation & Sustainability

CIII – RQ1: How has the integrated model shaped the University's culture of assessment?

CIII – RQ2: What contributes to the sustainability of the integrated assessment use of results model?

Participants and Sampling

In this study criterion-based purposeful sampling was used (Onwuegbuzie & Collins, 2007) within Mountain State University. Within this method a different set of criteria were used with each set of participants. Table 1 summarizes the participants in this study by research cycle.

Table 1

Study Participants by Research Cycle

Participants	Research Cycle Participation (Y/N)					
	Pre-Cycle Survey	Pre-Cycle Individual Interview	Cycle I Group Interview	Cycle II Group Interview	Cycle III Group Interview	Cycle III Survey
All Academic Affairs Staff (n=80)	Y	N	N	N	N	Y
Professional Assessment Community Members (n=6)	Y	Y	Y	Y	Y	Y

The first group entitled *All Academic Affairs Staff* included all employees at Mountain State University employed within the Academic Affairs division. There were 80 potential participants in the pre-cycle and cycle three surveys. Appendix B reflects the organizational structure of the Academic Affairs Division at Mountain State University. This only criterion in use for this group was employment in the Academic Affairs division. The MSCHE questionnaire was provided to all 80 employees within Mountain State University's Academic Affairs division (Appendix B), once at the onset of this research study in the pre-cycle and then again at the conclusion of cycle three. This survey distribution design is intended to provide for a pre-test / post-test data set which will be used to observe if any change in perception or awareness of assessment activity can be observed and potentially attributable to the intervention strategy of the PAC.

The second group of participants is the PAC membership which consisted of six members. Presently, Mountain State University has a formal structure entitled the Learning Outcomes Assessment Committee (LOAC). The LOAC is comprised of the following employees: Assistant Provost of Learning Outcomes (myself), two rotating

educational facilitator representatives, one representative from each academic school and one instructional designer. The criteria for inclusion in the PAC contained two elements. The first was that of holding a current assignment on the LOAC and the second was that of being employed as a full-time administrator at Mountain State University. The rationale behind this decision was that this group is entrusted with the overall direction of the assessment and use of assessment results process at Mountain State University and are closer to the assessment process than any other administrators.

Introduction to Findings

After obtaining informed consent forms from research participants, I deployed a survey to all Academic Affairs division staff at Mountain State University. Following the survey distribution, the pre-cycle reconnaissance phase continued with semi-structured individual interviews with the six PAC participants. These interviews commenced from June 15, 2020 through July 8, 2020. In cycle one, the PAC held six one-hour meetings from July 13, 2020 through September 14, 2020 and culminated with a group interview on September 17th. In cycle two, the PAC held four one-hour meetings from September 30, 2020 through October 27, 2020 and culminated with a group interview on October 27, 2020. In cycle three, the PAC held four one-hour meetings from November 16, 2020 through December 7, 2020 and the interview portion of my data collected culminated in a final group interview on December 9, 2020. Analytical memos were developed and shared with the PAC members following each research cycle and can be found in Appendix G. This research study concluded with a final survey deployment, once again, to all Academic Affairs staff of Mountain State University. The questionnaire used in cycle three was identical to the one used in the pre-cycle reconnaissance phase.

At the conclusion of each research cycle analytical memos were prepared and shared with the PAC members. This served as a method to ensure that ideas and comments captured were accurately and appropriately recorded. Additionally, this allowed for Elliott's (1991) idea evolution over time action research principle to be observed by the participants themselves.

Data Cleaning

Data from the pre-cycle and cycle three surveys were cleaned using the following procedures. In the pre-cycle data set, 15 responses were eliminated from the study entirely. These were instances where respondents completed the consent portion of the survey but did not answer any of the substantive questions. Of the 47 viable submissions, four respondents had between one and four missing data points. I utilized a mean replacement method for these data points (Osborne, 2013). Within the cycle three data set, 11 responses were eliminated entirely due to the completion of the consent items but zero responses provided on substantive survey questions. Of the 32 viable submissions, one respondent was missing one data point. As with the pre-cycle survey data, I used the same mean replacement technique to fill in the single missing data point.

Study Adaptations

I began this research study with the intention of holding a total of six one-hour PAC meetings. The plan was to hold two PAC meetings and one group interview per research cycle after the pre-cycle phase. It became clear, however, in the course of PAC meetings, that the depth and breadth of discussions and planning necessitated additional time. In the end, a total of 11 one-hour PAC meetings were held in the course of this research study.

Qualitative Findings

Qualitative Theme Evolution

One of Elliott's (1991) critical aspects to action research data analysis is the change in data over time. Elliott (1991) refers to this as the evolution of general ideas over time (p. 88). In this study, a new set of themes has been generated following each research cycle, and will be displayed adjacent to one another at the forefront of each major finding sections using a visual aid matrix. Elliott's (1991) model of action research is inherently chronological and calls for the observation of cycle-specific thematic conceptualizations but also places great value on observations of change over time. It is for this reason that, in the following sections, I will explore each cycle's themes following the same chronology of the research itself and positioned as sub findings beneath each major finding. Each theme matrix has been positioned adjacent to one another in accordance with Elliott's (1991) idea-evolution framework. Each theme matrix juxtaposes the themes from each cycle to allow for visual recognition of idea evolution over time.

When considering theme evolution over the span of this research project, I have observed evolving and bifurcating threads, discontinued ideas, and periodic surfacing of certain topics. The gaps visible in these theme matrices exist to portray when and where certain themes first emerged, and whether they persisted or disappeared. Wherever possible, themes that have evolved with similar meaning, or remained relatively consistent, appear in line with their predecessors.

The major findings presented in this chapter are the end results of the theme evolutions appearing in the myriad theme matrices. The major findings are complex in

that they bring together a series of ideas, actions and conclusions drawn from the data through an iterative process (Elliott, 1991). As such, constant revisiting of the theme matrices is important for context.

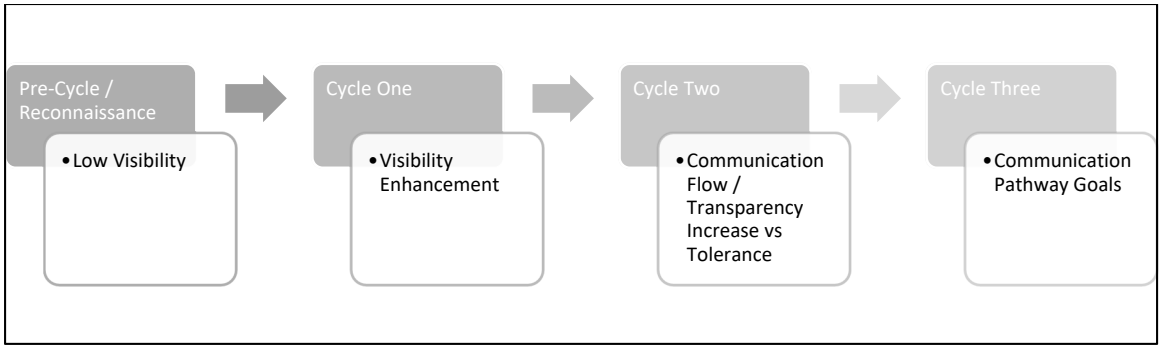
Qualitative Major Findings

The major findings presented in this chapter reflect participant contributions as seen through my eyes and gel together to form the basis of an assessment silo integration strategy. There are four major findings presented in this chapter. Each major finding represents a synthesis of emerging themes stemming from the four cycles of action research conducted in this study. Themes evident in the pre-cycle have informed future themes in a scaffolding manner if data was present and supported theme persistence over time (Elliott, 1991). I have noted thematic persistence, gaps, and evolutions in the sections below. The themes emergent in this study have been merged based on common meaning to form the major findings. For each of the findings below, I first present an overview of the finding and then subsequently elaborate on the themes that comprise the finding.

Major Finding 1: Synergized and Visible Connections. The first major finding, entitled synergized and visible connections, weaves together the perceived need for simultaneous holistic integration and formalized visibility, between the people, processes, and structures that support the assessment and use of results efforts at Mountain State University. This major finding is an evolution of themes surrounding the importance of developing synergized and visible connections as seen in the theme evolution matrix in figure 13.

Figure 13

Theme Evolution Matrix – Major Finding 1: Synergized and Visible Connections



The perceived lack of leadership-supported public recognition of assessment efforts and specifically how assessment results are used, and by whom, was a highly prevalent component of this finding. Furthermore, a lack of organizational clarity and understanding was noted by participants relative to individual roles and responsibilities of University staff assigned to engage in established assessment processes. One offshoot of this concept touched upon the need for more inclusivity by the University's educational facilitator population. Lastly, in support of use of assessment results synergy, the establishment of codified communication pathways or structures was perceived as critical requirement. This, coupled with leadership support for widespread sharing of assessment data, was perceived as a necessary component as well. The finding of synergized and visible connections emerged over the four cycles as follows.

Low Visibility. From the pre-cycle data, participants perceived relatively low visibility and a lack of transparency across Academic Affairs with respect to the assessment and use-of-results processes. Interviewee 3 noted, "Wow, look at all this amazing work [related to assessment] we do." And, "How have I been an employee here

for three years and really have only touched the surface on knowing about this, especially as somebody who works in assessment." With this quote Interviewee 3 has made it very clear that there is a lack of transparency and a lack active information sharing leading to an awareness, across the University, demonstrated by their close involved in the assessment process albeit relative unfamiliarity with assessment results and the use thereof. This quote is highly representative of perceptions of PAC members as low visibility was referenced predominantly throughout this study.

In cycle one, their focus on visibility was transformed to an action-oriented mindset in which they espoused a need, and desire, to enhance visibility of the work being conducted around assessment results. Between cycle one and cycle two, the PAC operationalized their desire for increased visibility by focusing on practical communication methods, which lead to the establishment of the Professional Assessment Community (PAC) Action Plan. Participant comments, organized into common themes placed a high emphasis on action in this study. This action orientation was the result of a lack of information sharing and which further evolved into other themes noted below in cycles three and four.

Supported by research participant comments highlighting a lack of transparency, siloed communicating, and siloed human responsibilities, the PAC participants felt that there was generally insufficient regular and centralized communication relative to assessment processes and the use of assessment results. Interviewee 3's comment especially emphasized the low visibility aspect of assessment and use of results efforts in saying, "I don't see it [assessment results]. It doesn't come down to me. If I specifically ask for it, I can probably look for it and get an answer but it's not something that's

brought into the process and leads the process." Interviewee 4 commented, "…there are times when I have access [to assessment data] and there are times when I don't know if I'm having access because information is not necessarily being disseminated to my level." Evident here is the lack of awareness of assessment and use of results efforts as well as a dearth of active information sharing.

Visibility Enhancement. Another theme emerging from cycle one, and used to inform the PAC Action Plan development, was that of visibility enhancement. This appears to be an evolution from the pre-cycle finding of low visibility and denotes the PAC's pivot from examining the current state and envisioning a more desirable future state. Interviewee 1 stated, this time relative to educational facilitator engagement in the assessment process, "They have no idea the process that we're following and best practices and how we're integrating different projects between different schools to improve the overall university." Interviewee 1 is referring to the academic leadership in this comment which consists of the school deans and provost. The PAC desire here is for more visibility across academic schools which are operating as silos as well as a glimpse into the future theme of needed synergy.

The themes of cycle one reflected the beginning of a shift in thinking by the participants stemming from the pre-cycle data of the initial group interview. Observing how the theme of low visibility evolved to visibility enhancement as well as a perceived lack of synergy morphing into a discussion around collaboration optimization was of note.

Following the reconnaissance phase, and during cycle two, the PAC began development of an action plan. The purpose of this action plan was to thwart many of the

issues revealed in the pre-cycle and cycle one around the lack of formal communication and collaboration which translated directly to the themes of low visibility, visibility enhancement and lack of synergy, collaboration as well as curricular connections. The action plan took shape by virtue of the perceived necessity and desire to enhance communication and collaboration through specific action. This action orientation was highly prevalent in cycle one and two of this study. PAC members began to cite specific limitations to communication and collaboration and I, as the researcher and as the University lead for assessment, began to note specific process changes, accountability forum opportunities, and codification methods. Each of these were discussed, refined, and ultimately adopted by the PAC which formulated the final version of the PAC action plan.

The PAC identified the lack of formality relative to communication and collaboration as a prevalent issue. The PAC action plan seen in table 2 calls for ongoing and formal communication, in the sense that information sharing occurs at established governance meetings of the organization. The identified "distributor" and "recipients" personnel, found in the action plan, were intended to formalize the collaboration between these individuals or groups. In some instances, e.g., the venue of the Academic Leadership Team, the PAC's intent was unidirectional information sharing. In other instances, e.g., the venue of Provost Cabinet, the PAC's intent was to facilitate dialogue and interaction.

The action plan visible in table 2 called for certain key staff to disseminate and lead a discussion relative to programmatic assessment results within their sphere of influence. For example, Academic Deans would be responsible for sharing the data and

associated action plans with the Provost's Cabinet. Another example included having instructional design staff would be responsible for sharing data and plans at quarterly instructional designer meetings.

Table 2

Professional Assessment Community Action Plan

Distributor	Venue/Recipient(s)	Document/Information

(OLO)	MSU Portal
	
	(Available to all MSU Employees)
		Outcome Assessment Project Data Sheet:
		• Program Name
		• Outcomes Assessed
		• Sampling Plan
		  ○ Artifacts Selected
		  ○ Semesters Selected
		  ○ # of Students Selected
		  ○ Student Demographics
		• Rater Names
		• Rubric Criterion Statements Minimal through Advanced
		• Rubric Scores (aggregated and disaggregated by artifact/criterion)
		• Action Plan
		  ○ OLO Recommendation for Assessment Data Driven Action
		  ○ Dean Recommendation for Assessment Data Driven Action

Dean	Provost Cabinet Meeting (Provost Direct Reports)	
Dean	Academic Leadership Team Meeting (All Academic Affairs Staff)	
OLO	Admissions / Recruitment Meeting	
OLO	Advising / Student Success Meeting	
Asst./Assoc. Dean on PAC	Assistant / Associate Dean Meeting	
CLT members on PAC	Quarterly Assessment Development Team Meetings Quarterly Instructional Designer Team Meetings	
CLT members on PAC	SME meeting in response to assessment driven curriculum change. The School needs to include the data set when requesting curriculum revision.	

The PAC action plan seen in table 2 is central to this study as it lays out the intervention strategy encapsulating who will be tasked to share information relative to the use of assessment results. In addition, where and when this sharing and discourse will occur has been identified by the PAC. In terms of what information will be shared column three of table 2 identifies specific tangible data sets produced by the Office of Assessment. Aqua is the name of the University's assessment software. Aqua cover sheets contain relevant information necessary to understand an assessment project including which outcomes were assessed, sampling plans for the assessment project, rater scores, rubric scales, artifacts chosen and more. A sample of an Aqua assessment project cover sheet can been seen in Appendix H. These data provide the basis for any discussion in terms of what the data tell us about the assessment effort and more so about student learning as well as provide insight into the development of data-driven actions stemming from the assessment project.

Participants desired more communication pathways and the assignment of assessment champions who would be responsible for delivering the data, leading discussions around potential data use, and then collaborating with one another, and across silos, on the development of assessment-driven action plans.

Communication Flow. Another theme emerging in cycle two was that of communication flow & transparency. This theme appeared as an evolution from the prior cycle's themes of low visibility in the pre-cycle and visibility enhancement in cycle one. In the pre-cycle and cycle one, participants espoused a lack of visibility and expressed a desire for an increase in information sharing. In cycle two, participants shifted their conversation from noting an issue to beginning to develop a plan to deal with the issue, in

this case a lack of visibility. Participants noted a concern relative to the call for an increase of communication around the use of assessment results and how that would work given the University's current tolerance for transparency. Specifically, participants questioned whether full transparency of assessment results i.e., the sharing of data that is perceived as a positive indication student learning and data suggesting the existence of issues or a lack of student learning, would be realistically viable noting, anecdotally, that not all academic leaders appear to be comfortable sharing anything other than positive information. This concern is noted throughout this study as an issue of tolerance i.e., how comfortable academic leadership, or in some cases the University as a whole, is with transparency.

As a means to increase communication and, at the same time, increase the University's tolerance of communication and transparency issues, which will be explored in the next section, the PAC continued modifying the PAC action plan. As the PAC continued its conversation, action plan items were refined and expanded through more in-depth conversation about theorized impacts of the plan's execution. The action plan seen in table 2, developed as a result of the pre-cycle and cycle one intervention discussions, reflects a communication plan inclusive of tangible informational documents associated with identified individuals tasked with information sharing and identifies appropriate information-dissemination forums and channels. This plan was put into action on November 5, 2020 at Mountain State University through the Office of Learning Outcomes. The Office of Learning Outcomes was also responsible for development of the tangible artifacts disseminated in this plan. A sample of these artifacts can be seen in Appendix H.

Evident from participant contributions in the course of this study, was the ubiquitous notion that this plan required more time for proper execution than was allowed in the course of this study. These data will be explored in more detail in the section below relating to the theme of Change/Time Association. Participants believed that if more time was available for the action plan seen in table 2 to be carried out, that more of an impact may have been realized by Academic Affairs administrators at Mountain State University.

Transparency Tolerance. In cycle two the participants' discussion evolved beyond the topic of communication to explore the transparency tolerance issues cited above. The participants espoused concerns about the realistic viability of maximum transparency with respect to the sharing of assessment data and use of results actions. The PAC engaged in a conversation around tolerance for this type of widespread communication and collaboration. Interviewee 4 said, "…Public institution, there's no reason [to not share data]. What would be a valid reason [to not share data]? I don't know what would be a valid reason for not sharing assessment data. That's just my opinion." While the PAC described a lack of rationale available to explain this phenomena, they expressed its existence none the less. There exists a simultaneous calling or pressure for transparency and yet at the same time a belief that negative assessment data, or the lack of action resulting from a specific assessment project would not be tolerated for widespread distribution. The PAC considered these issues as they refined their action plan (table 2). As the leader of assessment initiatives at Mountain State University, I perceive this issue to require delicate iteration and repetition with academic leaders at Mountain State University to continue to build an comfortable and safe environment

where all data and all actions, including the lack of action relative to use of results, are welcome. Additionally, the distance between academic deans and assessment data nuance is another gap that needs to be closed in order to create said environment.

Participants noted the public nature of the University as well as questioned the need for any type of shrouding relative to assessment data. Participants believed there was little support for secrecy in these processes and began working toward identification of existing and gaps in structural communication pathways. Interviewee 1 stated:

> So you may have some deans embrace this. Some deans may not want to put their learning outcome results or action plan out there...so I'm not sure if this process will be something that they'll be comfortable with…so I think it's still unknown how it's going to be perceived.

Additionally, Interviewee 1 added, "…I think the validation has to come from the dean's first, see how comfortable they are and see if they will embrace it." From these comments, it appears that the participants were unsure how comfortable the deans, as academic leaders and traditional owners of assessment data, would be with sharing their data and action plans in as open a manner as the PAC had detailed in their action plan visible in table 2 even though they themselves were comfortable with full transparency.

In the course of this study, the participants shifted their discussion from visibility to that of communication, including a focus on identifying existing communication pathways and engaging in a specific identification effort of non-existent communication pathways. The participants also began developing the basis for creating new communication pathways, through the PAC action plan, and established realistic goals

include specific assignments of who would share data, what data would be shared, when data would be shared, and in which forums this would occur.

Role and Responsibility Clarity. One desire of the participants, manifesting as the theme of role and responsibility clarity, was to have explicitly clear role and responsibilities outlined for their duties in the assessment and use of results process. Participants felt that there was implied responsibility but that it was not equitable across academic schools. Interviewee 1 noted, "The way it is right now, basically within the school of…, it's just my responsibility." Interviewee 2 stated:

> Obviously we're empowered at our level, but again, the Dean should at last be minimally aware or have information and things of that nature. But that's on them to how they structure and manage their time and the information that we're working on behalf of them.

This was expanded to include collaboration efforts, also with respect to assessment activity. The PAC attempted to document the level of clarity they desired in the PAC action plan (table 2), thereby identifying actual individuals and job titles and positioning them adjacent to specific duties inclusive of the frequency and forum in which to deliver materials and lead discussions on assessment data and use of results. This was in an effort to support synergy across the schools as well as to formalize the collaboration requirements. Interviewee 4 stated:

> …the action plan, even though it's technically reactive, it's also now proactive because going forward, I have to make sure I'm on top of that as an administrator, so then when the process comes around again, the renewal process, so to speak, we're on top of that.

Here, interviewee 4 appears to be reflecting the intervention strategy of naming individuals formally in a task-oriented document and also suggesting that these tasks may be delegated to administrators in support of the identified individual, i.e., the Dean.

Evident in participant comments was a request for public sharing of assessment data and use of results by academic deans in support of accountability. By requiring the academic deans to share publicly, the participants were hoping to increase follow-through by means of public accountability pressures. This notion relates to the issues of role and responsibilities in that it would, if effected, crystalize who is ultimately responsible for academic assessment. In this context, the perception is that this role is filled by the Dean. Interviewee 1 provided two separate comments in support this notion, "And I think this would put a little more pressure on making sure that we actually do follow through and close the loop" and "And I would add to that, that sharing results would create an environment where we would actually have to follow through."

Need for Synergy. The second theme of the pre-cycle, and persisting through this study, reflected a lack of, and perceived need for, synergy in the use of assessment results processes. Synergy, in this context, is used to denote an optimization of collaboration and communication that would positively impact the process of assessment and the division of Academic Affairs as a whole. Participants were unified in their advocacy for a synergistic approach to assessment and use of results. Participants believe there is hidden value that could be revealed through synergizing their work. For example, all assessment efforts map to institutional learning outcomes however these assessment projects are carried out in silos despite a common framework alignment. Decisions made based on data are also made in silos. Synergizing the effort, participants believe, may allow

commonality to generate efficiency, i.e., why have four units all assess the same institutional outcome of Information Literacy separately when we can agree on a uniform effort. They frequently commented about the lack of educational facilitator involvement in the process and were hyper-focused on the lack of coordination between the academic schools. More specifically, they cited a serious concern about the disconnect between a school's review of assessment data and visibility into how those efforts manifested as change. They further noted that the data were never provided to appropriate change agents, i.e., instructional designers and subject matter experts. Interviewee 3 stated:

> …as of right now, it would be very easy to put your head down and not pay attention to any of the data. It's not part of the process…you could step into a design process and never know what was happening really before.

The lack of coordination noted by interviewees included educational facilitators teaching courses being out of the loop on the use of results efforts. Additionally, interviewees noted that subject matter experts and instructional designers, developing or modifying courses, were not being provided assessment data or intended use of results as they carry out their duties relative to conducting course revisions either based on assessment data-driven decisions or through a different catalyst e.g., new textbook. Participants suggested that this lack of information was perceived as leading toward sub optimal curriculum redesign efforts.

Operationalizing Collaboration. I observed another thematic evolution between the pre-cycle and cycle one findings. This evolution reflected a change from participant focus on the need for synergy to that of operationalizing collaboration. Supported by ideas of reaching across silo barriers, formalizing informal collaboration efforts, and

engaging in cross-departmental assessment, participants began to concretize strategies for improving collaboration around the use of assessment results. This shift reflects discussions and themes evident in the pre-cycle related to a perceived lack of synergy and lack of coordination and evolved into the beginnings of strategy development for combating those issues. These strategies manifest as tangible actions in the PAC action plan (Table 2) relative to ensuring appropriate inclusivity and accountability. Interviewee 2 said, "…[it is] a rare opportunity for professionals across the campus to look at the outcomes report and have a conversation about it from so many different perspectives and angles." This comment spurred a reaction by PAC members who agreed with the noted lack of collaboration opportunities and they immediately began to develop plans (Table 2) which allow for more of these opportunities.

The short but pointed comment made by Interviewee 2 in the context of available forums for discourse, "…space for us to have that conversation," supports the shift between the identification of an awareness issue toward the beginning of a plan to bring about more integration through enhanced communication structures. As I looked at the coding results conducted in this study, I found forums for discourse and siloed communication as components within the visibility enhancement theme e.g., participants leveraging their desire for a space to hold discussions as a means to reduce siloed communication. Additionally, I observed the theme of forums for discourse also pointing back toward the theme of collaboration, i.e., participants using their desire to have a forum for discourse to not only reduce siloed communications but also as a means to increase collaboration. These discussions, and formalization of action plans replete

with forums for discourse, ultimately led toward planning for the formalization of the PAC.

Communication Pathway Goals. The concepts of communication and transparency enhancements continued evolving and informed the discourse of the PAC. The result of this continued conversation was the emergence of a new theme, that of communication pathway goals. Stemming from concepts such as integrated communication, sharing of knowledge, and the PAC's desire to create an integrated climate of assessment literacy, the theme of communication pathway goals crystallized the PAC's perceived need for a more integrated, synergized, and formalized communication pathway to facilitate the sharing of assessment data and use of results dialogue and decisions. In this regard, integration, synergy, and formalization are the actual goals the PAC discussed when developing the action plan. These goals manifested as a communication pathway through which the sharing of assessment data and use of results would take place and was used to inform the development of the PAC action plan (Table 2). Interviewee 1 commented, "I think in the future we're hoping that because of the training and the exposure [provided by the PAC] that other departments and units will be privy to, and expanding, the communication of learning outcomes across the institution."

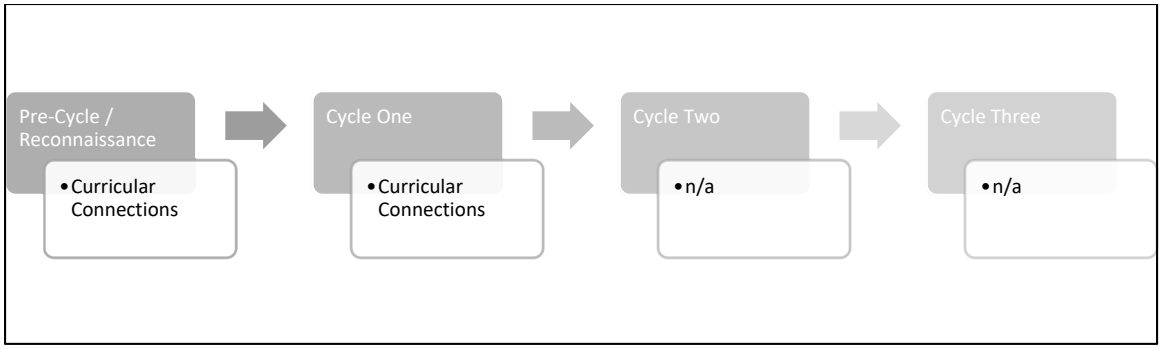
One of the critical aspects of the PAC action plan was an aim to increase information sharing and discussion around the use of results. Prior to the development and implementation of this plan, assessment data and the use of results were only shared between the Office of Learning Outcomes and each school in which the assessment activity was conducted. The Office of Learning Outcomes formally sends the assessment

results to the Dean. From that point, there is no formal requirement for the Deans to share the data beyond themselves. This happens sporadically and in a non-standardized fashion, according to the participants. The information dissemination requirements seen in Table 2 calls for assessment data and use of results decisions to be shared publicly through passive posting on an internal portal which is accessible to all staff. Additionally, the plan in table 2 requires active dissemination of information and discussion leadership by the assigned administrator in seven additional forums. With the full implementation of the action plan seen in table 2, the entirety of the academic affairs division will actively receive assessment data, use of results information, and be engaged in a related discussion.

Major Finding 2: Curricular Connections. The ongoing work and dialogue of the PAC appeared to place the University's curriculum at the intersection between the need for synergized assessment efforts, clarified assessment roles and responsibilities, and the establishment of concrete communication pathways. This major finding is an evolution of themes relating to the conceptualization of Mountain State University's curriculum as an informational interchange connecting people, process, and culture and can be seen in the theme evolution matrix in figure 14.

Figure 14

Theme Evolution Matrix – Major Finding 2: Curricular Connections



In defining the University's "curriculum," as it relates to the theme of curricular connections, this theme weaves together traditional curriculum components with people, process, and culture. Participants collectively agreed that this concept reflects: academic programs and program outcomes; courses and course objectives; assessment artifacts; as well as the peripheral processes and people currently assigned to support the development and revision of these myriad elements. The convergence of the aforementioned attributes appears as a conceptual and structural information interchange within which University staff interactions, related to specific curriculum topics, come together and resulting in changes that ultimately affect the University's curriculum.

Alignment between the use of assessment data and courses, artifacts, programs, and holistic curricular directionality were the foci of this theme and its subsequent iterations found within data collection. Participants overwhelmingly supported the University's efforts of curriculum mapping between institutional outcomes and programs outcomes, program outcomes and course outcomes, course outcomes and course

assessments, at the forefront of a program or course development project. Interviewee 2 said:

> Developing programmatic outcomes, is a part of the initial development process, and involves typically a subject matter expert along with members of our CLT team and LOC, the learning outcomes committee. So, there are multiple individuals across divisions on the committee, and multiple individuals who again are trained and knowledgeable, involved in the development process. So, I would say that it is cross-divisional.

Interviewee 3 said, "…when we develop module objectives, course objectives, that everything aligns to every assessment that a student does." These comments reflect how traditional curriculum concepts such as program outcomes, courses, course content, and course objectives, intertwine with the people and processes that support an intricate web of alignment.

Stemming from the pre-cycle, this theme persisted forward into cycle one. In the pre-cycle, the theme of curricular connections was comprised of four sub themes: alignment with artifacts, alignment with courses, influencing the curriculum, and course/program revision. Two of these sub themes appeared in cycle one, influencing the curriculum and artifact alignment. Three new sub themes emerged in cycle one relative to the curriculum: audience-based deliverables, deliverable customization, and a focus on how the curriculum itself enables students to meet learning outcomes. Participants focused on the intersection between pedagogical structures such as courses, programs, program directionality, and the pedagogical approaches to learning used by the instructional design teams. However, there was a shift in participant discussions as

compared to the pre-cycle. In cycle one, participants dove more deeply into aspects of course design and outcome scaffolding in which they explored the various levels of outcomes in use at Mountain State University and how those influence one another. Comments such as the one provided by Interviewee 1, "…[when do you] introduce, when do you reinforce, when do we identify if a student has mastered any concepts, knowledge of skillset," were common as part of the PAC's discussion.

In cycles two and three, as seen in figure 15, discussion topics related to curricular connections did not appear as distinct and separate from other themes but evolved into ideas on structures and efficiency which appear as themes in figure 16 relative to a different major finding. This is an example of how themes associated with one major finding evolved into themes that were associated with a separate major finding.

Curricular connections, as a construct or perhaps as a representation of an information interchange, facilitating the transmission of information around a common structure may serve as a unique platform on which the PAC may operate. The concept of alignment, i.e., the need for, as well as the presence or absence thereof was highly prevalent within the data collected for this study. Participants mentioned the need for alignment between and among programs, outcomes, courses, objectives, and assessments. However, participants also emphasized the need for alignment of actions and alignment of people which was visible in major finding one, synergized and visible connections. Discussion by participants relative to the when, where, and how alignment efforts may be enhanced was ubiquitous. Through the discourse, and analysis of these data, the PAC members discussed aspects of the University's curriculum in every research cycle. This

included descriptions of where and how alignment of the processes related to curriculum were perceived as either aligned or misaligned. Interviewee Five stated:

> …when I'm working with a mentor, if I'm getting questions from a mentor or if I'm getting push-back or if I'm running up against some issues with them being able to align the outcomes, or why do I need to do this, it just gives me more information and more leverage in explaining the process to them and why it's important and why we need to do it.

Additionally, PAC members discussed the myriad processes and workflows that connect people to one another for the purposes of engagement, information sharing, and decision-making. Interviewee Two noted:

> …mentor involvement would be beneficial, although for a different reason, because they are more directly involved in the design and delivery of the academic program, so they provide a specialized knowledge that would be helpful to have as a part of this process.

The connective tissue in this sense was the curriculum itself, i.e., course outcomes, artifacts, program descriptions, etc. The curriculum, using the definition above which includes not only traditional curriculum items but also people, process, and culture, appears as a viable central interchange which connects multiple communication and action pathways, as well as human interactions. Interviewee Five stated, "when we're designing programs it helps to guide what we're doing and it helps to make sure that there's alignment…" As such it may serve as a viable construct for the collaboration needs espoused by participants.

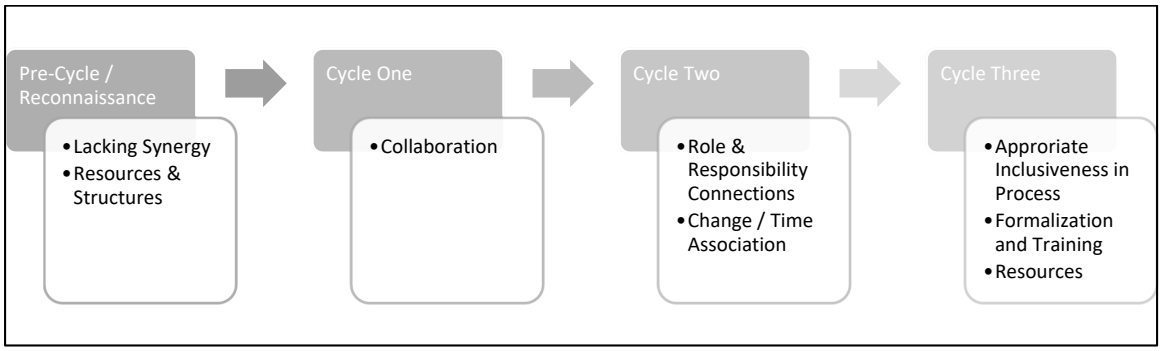
The relationship between alignment and curricular connections is such that alignment refers to the process of intentionally connecting aspects of the curriculum such as course objectives, program outcomes and institutional outcomes. Curricular connections is point of exchange where people come together to create those connection points in a collaborative fashion. It is this almost literal intersection between people and the work they perform in collaboration with another that defines curricular connections. The notion of viewing a University's curriculum as an orienting principle around which sit people, process, and culture as a mechanism for facilitating real change, may be an area of future research.

Major Finding 3: Structural Formalization & Institutional Commitment. The third major finding of this study is entitled structural formalization and institutional commitment. This finding reflects a change in mindset from observation & reflection to that of action by this study's participants throughout the course of the four cycles of research.

This major finding is an evolution of themes emerging from this study relative to structures, formality and institutional commitment which have evolved over the course of this study and can be seen in figure 15.

Figure 15

Theme Evolution Matrix – Major Finding 3: Structural Formalization & Institutional Commitment



Participants first espoused observations of formal existing structures and resources in place during the pre-cycle, then shifted to recognizing informal resources engaging in the assessment and the use of results processes in cycles two and three. PAC participants determined that there was a dearth of formalized, and codified, policies and procedures related to assessment and the use of results. Realizing this, between cycle two and cycle three, PAC members began shifting their focus toward expressing the need for more formalization and institutional support. Their calls for formalization, codification, and support were reflective of their enthusiasm for continuing the PAC's operations in a very public manner and associated with the formality of University policy.

Formalization & Training. This finding has roots going back to the theme of low visibility as participants, during the pre-cycle and cycle one, simultaneously identified the organizational structures and human resources responsible for carrying out assessment while conveying a sense of uncertainly with the formality of said structures. Academic school staff and the Office of Learning Outcomes staff were identified, as well as various

other systems that are included in the process of assessment. However, the extent to which these staff collaborate and engage with these systems and structures was conveyed as unclear. Additionally, an espoused lack of equitable acumen across assessment users was prevalent. Interviewee 2 said, “There are divisions within academic affairs however, and there are those individuals who are familiar with our assessment process, and those who are not.” Here I can see the human resources involved in the assessment and use of results efforts noted but also noted is a lack of equitable awareness with the assessment process. Participants believe that formalization would drive training, which they believed was necessary to level the skill set across schools, and generate the resources needed to support said training, thusly ensuring a common awareness and understanding of the process.

The PAC espoused a need for training which focused mostly on assessment procedures. However, the PAC members also noted a need for professional development specifically around the connection between assessment development and instructional design as well as the overarching development of a culture of assessment. Interviewee Three noted:

> Because I think that goes back to you talking about kind of creating a culture and so starting the conversation. …the reaction on the ID team, we had a similar moment in the AD team and to be honest, I don't know of my peers work in (assessment). Wouldn't even think that that would be a sensitive conversation. Moving forward as these conversations start to happen there may be conflict at first, but over time I could see a more junior member of the team or somebody

else saying, "Hey, this could be part of my professional development plan." Because they know it's out there.

Here, interviewee Three was providing a reaction from the first deployment of the PAC action plan (table 2) to the assessment developer (AD) meeting. In this, interviewee Three was citing a disconnect, this time even between the two smaller sub units of assessment development and instructional design. Interviewee Three was also seeing the opportunity to leverage the PAC's action plan into a professional development opportunity thus making it part of the culture. In other words, PAC participants could engage in professional development around outcomes assessment and closing the loop activities as part of their initial and subsequent involvement on the PAC.

Participants called for the PAC to be codified formally within appropriate policy, procedure, or bylaws in an effort to establish its presence and ensure longevity of work as well as to ensure a more formal and direct approach to silo integration around the use of assessment results. Interviewee 4 stated, "I think we've talked about a structure, the process of putting it into, whether it's a policy and, or a procedure." Coupled with this was also their espoused concerns around resource availability and allocation prioritization. Participants noted that, at Mountain State University, those formal structured codified in University policy, procedure, and / or bylaws appeared to garner more resources than informal structures. This conclusion was a driving factor behind their viewing the PAC work as valuable and wanting to see its installation as a formal entity which would, ostensibly according to the PAC members, ensure sufficient resourcing for sustainability.

Change/Time Association. Another theme, this one appearing in cycle two, was the change/time association. Informed by the theme of resources and structure in the pre-cycle this theme reflected the PAC's thoughts that the action plan implementation required more time to be effective. In the pre-cycle, sub themes emerged through coding of participant comments revealing a lack or uncertainty of support for assessment and also the recognition of existing structures involved in the assessment process. These sub themes combined together to form the theme of resources and structures. Following cycle two's development and deployment of the PAC action plan, participants reflected back to the pre-cycle in their determination that yes, the PAC action plan focused on resources, namely human, and structures, namely formal venues for information sharing and dialogue. However, their reflection on the pre-cycle theme of resources and structures also informed the cycle-two theme of change/time association. Participants recognized that the time between the development, deployment and partial execution of the PAC action plan, and the group interview in cycle two did not afford sufficient time to substantively impact the resources and structures identified in the pre-cycle. This became evident in the group interview where participants were asked about whether they perceived any change to have taken place thus far as a result of the work of the PAC thus far and the PAC's action plan implementation. Only one aspect of the action plan was completed by this time and that was the instructional design quarterly meeting during which participants had been exposed to one program outcomes assessment project set of results and a discussion was anticipated to happen soon around action planning ideas. Interview participants were positive about the steps we had been taking thus far. Interviewee 5 said:

> It's hard to know what the impact is, but I think it will be interesting to see what the rest of the instructional design team has to say when we discuss the document…so it's just sort of a difficult thing to know right now. I mean, it seems like we are taking steps that will be beneficial, but also we have to make sure that we keep following through with it and it's not something that just sort of fizzles and then nothing really happens or comes of it.

Interviewee 4 added, "I agree…it's kind of to be determined. Obviously I think we've done some good stuff here, but obviously until it's unveiled and feedback is provided from outside of this group, it's still up in the air." Other participants shared a general consensus that it was too early to tell if the work of the PAC had any impact on the larger group of Academic Affairs staff.

Conjoining their thoughts around formalization and codification, and the time needed for change to occur, participants unanimously supported policy-level recognition of the PAC and formalization of the human resources, across Academic Affairs, assigned to support assessment efforts as a means to ensure that the PAC action plan would have the necessary time and resources to impact the broader population of Academic Affairs. Participants noted that one commonly accepted method of the University to demonstrate its support and commitment is formal policy codification.

Resources. The discussion around resources related to staff resources, educational facilitator limitations, as well as consideration for schools which have programmatic accreditation. Interviewee 1 stated, "Different schools have different accrediting bodies, so the accreditation could be at risk if we don't have the proper resources and staff to really comply and make sure that we meet the requirements." Resource availability was

a generally pervasive theme in the course of this study. Participants viewed programmatic accreditation, as well as formalization in University policy, procedure, or bylaws, to have sufficient prominence within the University which was usually associated with the expenditure of resources to support these initiatives.

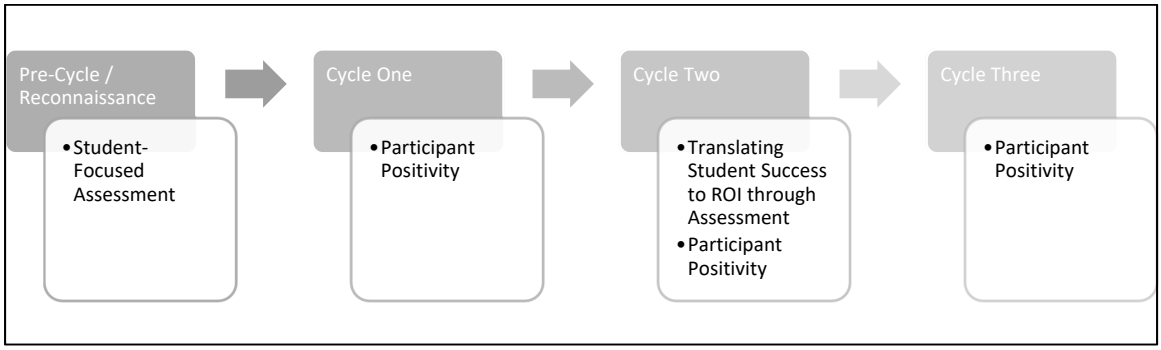
Appropriate Inclusivity. Related to cycle three's communication pathway goals theme, the theme of appropriate inclusivity aimed to establish the procedure for how, when, where, and specifically with whom, information is shared and action decisions made relative to the assessment and use of results process. This theme, appropriate inclusivity in the process, aims to ensure that the right participants are included from across the University in the assessment and use of results process. Participants espoused a desire to have more participation on the PAC specifically, from the University's educational facilitator population and to rotate individuals over time. Participants often compartmentalized their discussion around inclusivity into two groups, full time staff including administrators and leadership and separately the educational facilitator population. The same rotational philosophy was desired for staff participation as well as ensuring representation from all academic schools, the CLT and the Office of the Provost. Additionally, participants agreed that more educational facilitator involvement in the use of assessment results process was critical to advancement of the University's assessment efforts. Given the University's educational facilitator model, Interviewee 2 comments, "There might be limitations with resources in our efforts to bring in educational facilitators as we engage in this work." This comment reflects the contractual limitations of the University's educational facilitator contract as each educational facilitator's engagement with the University is narrowly defined in each contract.

Major Finding 4: Value Proposition of Assessment. The fourth major finding of this study, which was oriented around student-focused assessment and included University mission elements, is entitled value proposition of assessment.

This major finding is an evolution of themes emerging from this study relative to the perceived value proposition of assessment efforts. The cyclical theme evolution can be seen in figure 16.

Figure 16

Theme Evolution Matrix – Major Finding 4: Value Proposition of Assessment



This theme first emerged in the pre-cycle as PAC members conducted reconnaissance of existing assessment and use of results processes. This theme then evolved from the pre-cycle theme of student-focused assessment to the cycle two theme of translating student success to return on investment through assessment. Observing this ebb and flow, I believe the PAC members concentrated their action plan development in cycle one on filling gaps in information sharing, communicating, and collaborating areas. The PAC members then returned, in the latter stages of this research study, to the concept of student impact of assessment. In essence, students were at the center of the PAC work

during the reconnaissance but gave way to a focus on integrating operational silos related to information sharing, communication, and collaboration during cycle one. The PAC brought students back into their scope after the initial operational issues were addressed.

The value proposition of assessment has two primary domains, internal and external. Internally, this finding relates to the value of assessment data as a means for improvement leading toward higher levels of student achievement. Externally, the value of assessment data is measured by the value placed upon it by current and prospective students, accrediting agencies, and other regulatory bodies. Additionally, Mountain State University emphasizes, through its marketing efforts, the value of its degrees by the perceived value of employers.

Translating Student Success to Return on Investment through Assessment.

This finding simultaneously focuses on the external value proposition of assessment for compliance purposes with regional and programmatic accreditation as well as a means of determining return on investment thus driving resource expenditure decisions.

This thread experienced a bit of a jump in terms of appearance throughout the course of this study. Appearing in the pre-cycle and then again in cycle two albeit mildly transformed into the more business-minded idea of return on investment, this theme reflected the participants' commitment to always coming back to the question of student benefit. Participants first began discussing their desire to assess student work to allow for meaningful engagement of continuous improvement all for the benefit of strengthening courses and programs leading to more student achievement. These themes did not appear in cycle one. However, in cycle two participants continued revisiting this issue. In cycle

two, participants discussed the benefit of conveying the use of results actions directly to students and contextualizing how these efforts help them achieve their own goals.

Assessment and the use of results efforts used to drive curricular change is an expensive undertaking. Interviewee 2 stated, "We should not be engaging in any assessment project without knowing already that the resources are there for us to close the loop after we have our findings." In this, interviewee 2 is again discussing a concern around the hypocrisy of committing to an assessment and a use of results project with ambiguity of whether institutional resources will be made available to carry out any data-drive decisions based on the results of the assessment project. In this instance, the interviewee is citing primarily fiscal resources to carry out assessment-driven improvement projects.

One potential reason for the sporadic appearance of the student benefit theme could be explained by looking at the PAC's progression from theory to practice. In the pre-cycle the PAC discussed and explored the issues related to the use of assessment results. This discussion included student benefit as this concept is core to virtually all aspects of University operations. In cycle one, building upon the theory and current-state explored in the pre-cycle, the PAC began developing a plan to disrupt some of the negative attributes of the siloed use of results practices. In cycle two those plans were finalized and implemented through the PAC action plan. With concretized pathways for information sharing and dialogue, plus having the tangible documents provided by the Office of Learning Outcomes, the PAC circled back to the notion of student benefit perhaps as a way to reinforce why their action plan was necessary.

Student-Focused Assessment. Another theme in the pre-cycle was student-focused assessment. Participants espoused both a University commitment as well as a more localized academic school commitment to engaging in continuous improvement by assessing student achievement toward enabling students to meet the desired program outcomes. Interviewee 4 said:

> A way to measure that something. And so it's important that obviously, if our goal is student success, how do we assess student success? And so those outcomes become the measurements on how we do that. And so it should be coordinated across units.

Interviewee 4 additionally responded:

> Obviously each school, via each program may have a little bit of a different outcomes for different programs but at the end of the day, the underlying goal, I would think, is to ensure where students are succeeding, or how do we improve student learning to succeed as we move on an annual basis, through a standardized process.

The commitment to the goal of student success was pervasively seen through the pre-cycle and persisted through the entirety of this research project.

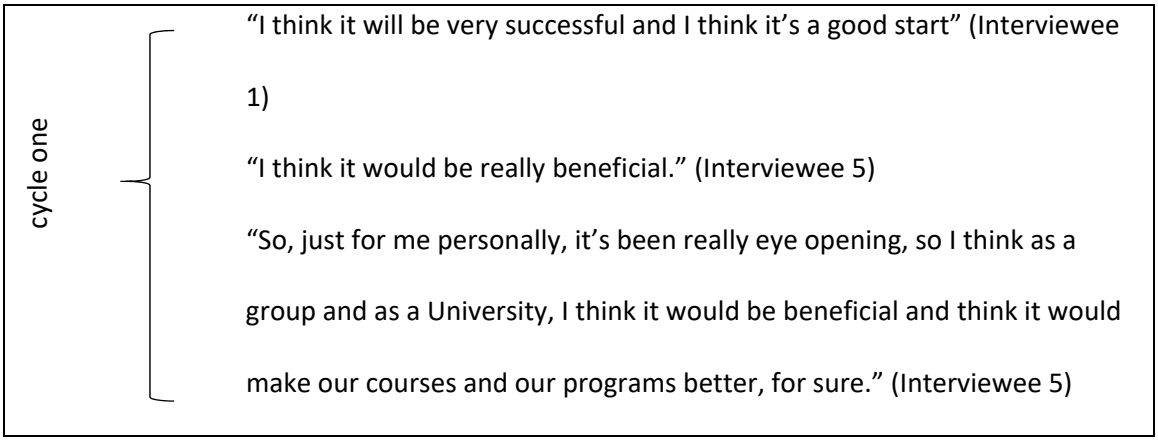
Another theme from cycle two related more closely to the actual work of assessing student learning and how the University will translate student success into some measure of return on investment (ROI). As such I have labeled this theme, translating student success to ROI through assessment. Interviewee 1 remarked, "…because if we're not delivering successful programs to our students, obviously the profitability will be impacted." Interviewee 1 went on to state that they believe the finance office to have a

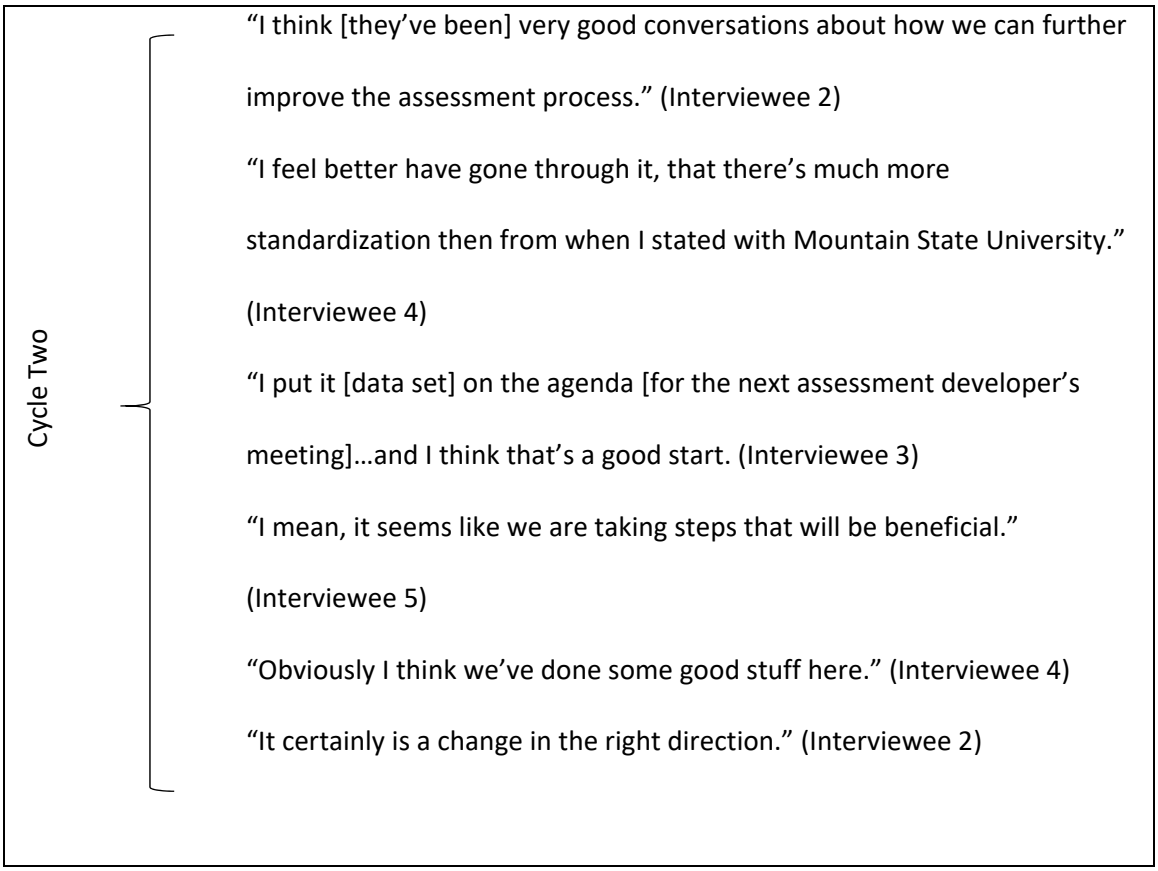
vested but unrealized interested in the demonstration of student success through outcomes.

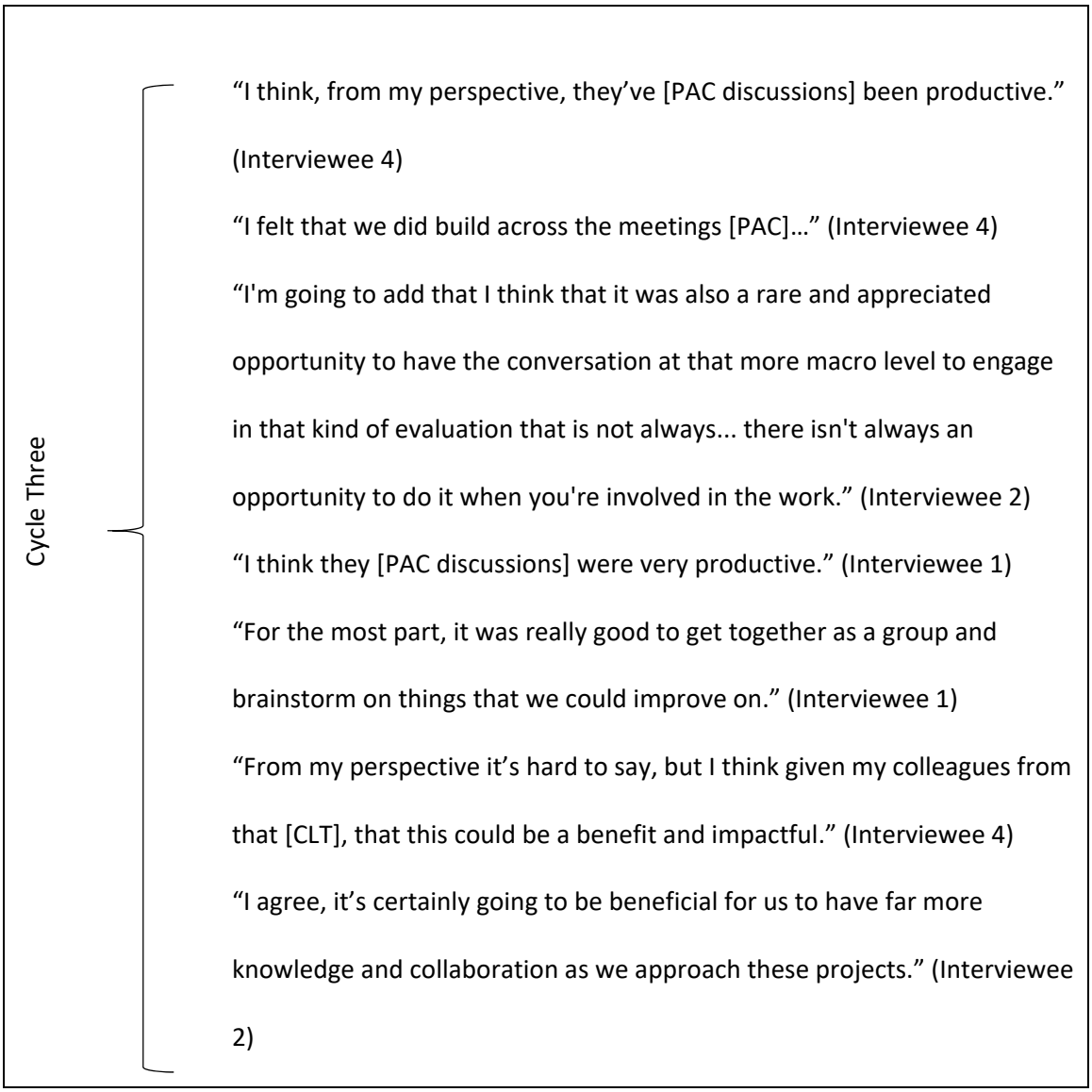
Participant Positivity. Appearing first in cycle one and persisting into cycle two and through cycle three was a theme shared by all participants which I have labeled; espousing a positive outlook. When discussing the formation of the PAC and its goals, participants expressed a deep appreciation for the additional focus on closing the loop efforts as well as creating forums for discourse. Below, in figure 17, I've provided a series of excerpts in chronological order that embody the sense of positivity espoused by the participants relative to the initiation of the PAC and the focus on use of assessment results.

Figure 17

Participant Positivity




Cycle Two
"I think [they've been] very good conversations about how we can further improve the assessment process." (Interviewee 2)
"I feel better have gone through it, that there's much more standardization then from when I stated with Mountain State University." (Interviewee 4)
"I put it [data set] on the agenda [for the next assessment developer's meeting]…and I think that's a good start. (Interviewee 3)
"I mean, it seems like we are taking steps that will be beneficial." (Interviewee 5)
"Obviously I think we've done some good stuff here." (Interviewee 4)
"It certainly is a change in the right direction." (Interviewee 2)



The positivity and enthusiasm displayed by the participants was visible in cycles one, two and three, appearing in their comments as well as in their commitment to this research project. There were no PAC meetings held, nor group interviews conducted, in which more than one participant was ever absent. And as the comments visible in figure 17 portray, the participant's interests in collaboration, standardization and general excitement for engaging in this type of work were quite strong.

Quantitative Findings

Quantitative Data – Pre-Cycle

This research project began with a pre-cycle survey using the Middle States Commission on Higher Education's self-assessment tool for understanding the awareness, across departments, of assessment and closing the loop efforts for higher education institutions. The pre-cycle yielded 47 completed surveys from the total of 80 potential participants, which represented a response rate of 59%.

Table 3 shows the pre-cycle and cycle three survey responses by participant response frequency. The three categories of responses are: not present, some presence and present everywhere. These response categories reflect the participant's perception and awareness of assessment practices related to the questionnaire elements at Mountain State University. Questionnaire rubric elements have been truncated for ease of visibility in table 3, however the full text of the questionnaire items can be found in Chapter 3: Methodology.

Table 3

Survey Responses

Questionnaire Rubric Element	Pre Cycle % of Participant Responses			Cycle Three % of Participant Responses		
	Not Present	Some Presence	Present Everywhere	Not Present	Some Presence	Present Everywhere
Sustained leadership and culture of assessment.	4.26	36.17	59.57	3.13	34.38	62.50
Learning outcomes exist at all levels/departments.	2.13	23.40	74.47	0.00	28.13	71.88
Outcomes stakeholders are appropriately engaged.	4.26	21.28	74.47	3.13	31.25	65.63
Program outcomes are visible to students.	2.13	23.40	74.47	0.00	21.88	78.13
Syllabi include outcome statements.	2.13	12.77	85.11	0.00	9.38	90.63
Outcome goals are rigorous and aligned with the mission.	6.38	34.04	59.57	3.13	37.50	59.38
Direct assessment and triangulation occurs.	6.38	38.30	55.32	3.13	40.63	56.25
Evidence of student learning is mapped to outcomes.	10.64	25.53	63.83	0.00	37.50	62.50
Results are shared, discussed and used for improvement.	6.38	40.43	53.19	3.13	34.38	62.50
Results are used to improve teaching and inform budgeting.	10.64	51.06	38.30	12.50	37.50	50.00
If any of the above do not exist, plans do exist.	14.89	34.04	51.06	15.63	43.75	40.63
Assessment processes are assessed themselves.	8.51	27.66	63.83	3.13	37.50	59.38
Assessment efforts are sustainable.	8.51	36.17	55.32	9.38	40.63	50.00
Total	6.71	31.10	62.19	4.33	33.41	62.26

Note. These results are from a criterion-based sample of 80 people surveyed in the Academic Affairs Division of Mountain State University.

Due to the methodological design, this study was not concerned with determining statistical significance of pre-cycle survey data. The quantitative data from the pre-cycle will serve as a comparable against the quantitative data collected at the end of cycle three.

The pre-cycle survey data suggests that participants from Mountain State University's Academic Affairs division perceive the existence of assessment and use of results activities in some or most areas of the institution as the total of some presence and present everywhere responses totaled 93.39%. Of note, 10.64% of participants felt that they were not aware of how or if evidence of student learning is mapped to outcomes. Additionally, 10.64% of participants also felt unaware how or if assessment results are used to improve teaching or inform budgeting. Lastly, 14.89% of participants believe that Mountain State University does not reflect a portion of the rubric elements, however they believe plans exist to address perceived gaps.

The quantitative data from the pre-cycle has been used to establish a baseline prior to any discussion or action taken by the PAC. The quantitative data from cycle three is intended to allow for the observation of change, in perception or awareness of assessment and use of results presence, by the larger population of Academic Affairs staff at Mountain State University.

Quantitative Data – Cycle Three

This research project concluded with a cycle three survey again using the Middle States Commission on Higher Education's self-assessment tool. The purpose of the post-cycle survey was to observe if a change in awareness, around the assessment and use of results, had occurred following a multi-cycle intervention project, spanning seven months, aimed at integrating siloed use of assessment results efforts. The cycle three

survey yielded 32 completed surveys from the total of 80 potential participants, which represents a response rate of 40%.

Table 3 shows the post-cycle or cycle three survey responses by participant response frequency categorized by the participant's perception of presence at Mountain State University. As before, in the pre-cycle or reconnaissance cycle, the three categories of presence are: not present, some presence and present everywhere. Additionally, I have shortened the questionnaire rubric items for visibility, however the full text can be found in Chapter 3: Methodology.

In table 3, of note, 13% of participants felt that Mountain State University does not demonstrate how or if assessment results are used to improve teaching or to inform budgeting. Additionally, 16% of participants felt that there are missing assessment elements found in the survey rubric criteria that the University does not have or perhaps does not openly demonstrate a plan to fill said gaps.

Quantitative Data Summary

A two-tailed paired *t*-test was performed using SPSS v 27 to continue my analysis between the pre-cycle and cycle three survey data. I removed all pre-cycle responses from the data set for which the same individual did not submit a viable survey response in cycle three. This dropped the total n to 27 common pre-cycle and cycle three responses. There was no statistically significant difference in the scores between the pre-cycle (M=2.57, SD=0.45) and cycle three (M=2.61, SD=0.40) conditions; t(26)=-0.55, p=0.587.

Though there were no statistically significant differences between the pre-cycle and cycle-three survey data, there were substantive differences. As seen in table 3, almost

every questionnaire rubric element experienced a reduction in participants "not present" responses. And while "present everywhere" responses remained relatively stable, the major shift of participant responses was from "not present" to the "some presence" category. This shift may be the result of the action and communication outreach plan put in place by the PAC as seen in table 3. However, PAC participants did note in cycle three that the PAC was limited in their ability to create more awareness by virtue of the limited time spent participating in this study as noted by one participant, "…going forward (I) anticipate a lot of improvements, but as far as comparing three months ago to today, I haven't seen anything yet." Compared to the pre-cycle quantitative data in which 93.39% of responses appeared as some presence or present everywhere, at the conclusion of this study, participant responses totaled 95.67% for some responses and present everywhere.

Summary

This study was designed to explore the perceptions and awareness of administrators relative to the assessment and use of results activities at Mountain State University. At the conclusion of the cycle three post-survey, and following an analysis and interpretation of data in according with the methods detailed in Chapter Three, four major findings have emerged: synergized and visible connections; curricular connections; structural formalization & institutional commitment; and assessment value proposition. Of note, but not considered a major finding, was the attitudinal positivity and general enthusiasm expressed ubiquitously by all participants for both having the opportunity to engage in this style of discourse and in working to further the assessment and use of results processes at Mountain State University. Further, these major findings are viewed

through a transformational lens (Elliott, 1991) contextualized by quantitative survey data analysis.

This study revealed a small increase in awareness, mostly moving from no presence to some presence of assessment and use of results related activities by the larger surveyed population at Mountain State University. This result is not surprising given the partially implemented PAC Action Plan and citing the theme of change/time association under which participants espoused a foreshadowing of more impactful change if the action plan had more time to be fully executed. Situated between the pre-cycle survey and cycle three survey, was the work of the PAC including the development and partial execution of an awareness & collaboration-centered action plan. As noted by the PAC members and interviewees of this study, there was unanimous agreement that the action plan developed by the PAC would need additional time to work in order to significantly increase assessment awareness by the larger population of Academic Affairs at Mountain State University.

Emerging from the data produced within this study was a very specific desired approach to future collaboration by participants. This approach, reflected in major finding one: synergized and visible connections, emphasized the need not only for collaboration and communication, but the need for said collaboration to be publicly visible, publicly supported, and tightly integrated across academic schools and academic support units. Tied to this is major finding three: structural formalization and institutional commitment. Once again, participants called for the public formalization of both the PAC and public identification of individuals assigned to support assessment and use of results activities.

The demonstration of institutional commitment is inherent in the participants call for public formalization.

With respect for the notion of bringing theory to practice, participants in this study were constantly concerned with the: who, where, when, and how aspects of operationalizing their ideas to support the proliferation of information and increasing collaboration. Participants exuded a continuous recognition of the University's curriculum, including those tangential processes and infrastructure on the periphery of academic curriculum, as an informational interchange capable of connecting people and process. Represented as the second major finding, curricular connections; this may serve as the platform on which participants ideas around synergy and visibility manifest.

The final major finding of this study, the assessment value proposition, appeared to bring the work of the PAC out of the theoretical world and more toward the practical side. As a means of mobilizing resources, participants aimed to legitimize the value, internally and externally, of assessment as well as the use of results efforts. The findings presented in this chapter will be used to answer the research questions in the subsequent Chapter Five.

Chapter 5

Discussion and Implications

In Chapter Five I will summarize the study, discuss and explore the findings, and assess the implications of the research. I will then review this study's purpose and research questions. I will present conclusions for each research question stemming from the findings presented in Chapter four. In this chapter I will further integrate the conclusions with the literature reviewed and presented in Chapter Two. I will then present my recommendations for policy, practice, and research in the area of assessment silo integration within higher education. All of my recommendations will stem from this study's findings synthesized with the conclusions presented in this section.

Study Summary

The purpose of this action research study was to use the experiences and perceptions (Stringer, 2007) of academic administrators around the use of assessment results at Mountain State University to disrupt the negative aspects of silo-based decision-making within the closing of the loop (Banta & Blaich, 2011; Ewell, 2001) assessment process. The study focused on the existence of assessment and use of results silos and, drawing from the literature, operationalizing means to disrupt their negative effects and move toward more tightly integrated structures. This study examined the perceptions and experiences of six academic administrators whose work was closely aligned to assessment efforts at Mountain State University.

University staff, and specifically those in Academic Affairs, may benefit from the conclusions and recommendations around silo integration presented in this chapter. Through an understanding of the negative aspects of siloed operations as well as this

study's recommendations on how to disrupt those detrimental issues, Academic Affairs leadership and staff may begin to resolve issues of inefficiency and redundancy in certain University operations. Research in this field suggests that the elimination of the inefficiencies and redundancies present within siloed operations will free up resources and serve as an accelerant toward organizational sustainability (Brown, 2017; Graham et al., 1995). The scholarly discourse in this area provides clear evidence of the negative aspects of siloed operations (Capra, 2003; Wilcock, 2013) and the positive attributes of a more tightly integrated operational structure (Andrade, 2011; Graham et al., 1995; Miller, et al., 2010; Wilcock, 2013. Additionally, the research provides suggested strategies for counteracting silo-driving forces and integrating already-siloed processes. However, these strategies exist at a macro level and existing research offers little evidence of strategy application in a real-world setting. This research study endeavors to fill in the missing pieces by focusing on strategy application through the specific context of assessment and use of results silos at Mountain State University.

This study was designed to address the following research questions, which are broken down by cycle. The cyclical nature of this study follows Elliott's (1991) action research methodology which, by design, is iterative.

Pre-Cycle Reconnaissance

PC – RQ1: How do academic administrators at Mountain State University describe the assessment process's use-of-results efforts as they relate to being integrated or siloed?

PC – RQ2: How do academic administrators describe the pervasiveness of assessment-related collaborative decision-making?

PC – RQ3: How are institutional logics reflected in the evolution of assessment's use-of-

results process and culture?

Cycle One

PAC Implementation, Observation & Modification

CI – RQ1: How has collaboration around the use-of-results assessment model changed?

CI – RQ2: What redundant use-of-results assessment activities have been identified and removed?

Cycle Two

PAC Observation & Modification

CII – RQ1: How have the roles and responsibilities of academic administrators changed in the moved towards an integrated use-of-results assessment model?

CII – RQ2: What impact has the PAC had on the closing-the-loop process?

Cycle Three

PAC Observation & Sustainability

CIII – RQ1: How has the integrated model had shaped the University's culture of assessment?

CIII – RQ2: What contributes to the sustainability of the integrated assessment use of results model?

Research Questions and Findings

Within Chapter Two, existing literature related to higher education silos, closing-the-loop processes and integration strategies were explored. Chapter Four then presented the major findings of this study following an exploration of participants' perceptions and experiences, relative to assessment and use of results silos and operationalizing ideas into actionable efforts. In the following sections, both existing literature and this study's

findings will be leveraged to answer each research question. In this section I will discuss each cycle's research questions and then I will address the implications of this study for policy, practice, and research subsequently. This chapter will conclude with a statement of recommendations.

Pre-Cycle Reconnaissance Research Questions

Pre-Cycle Research Question One. *How do academic administrators at Mountain State University describe the assessment process's use-of-results efforts as they relate to being integrated or siloed?* Academic administrators described the current assessment and use of results processes as lacking transparency and that these efforts reflected both siloed communication and siloed responsibilities. Additionally, academic administrators noted a general lack of awareness of assessment and use of results efforts which included a dearth of available tools in support thereof.

Participants commonly espoused a common theme of lacking transparency to reflect their perception that assessment and the use of results efforts are below the visible radar of many of their colleagues within the larger division of academic affairs. This closed system would naturally thwart knowledge transfer and shared learning opportunities, tying this issue to one of the negative effects of silos cited by Brown (2017). The closed system perception by participants is explained by the evolutionary nature of silos stemming from institutional logics (Brown, 2017, Friedland & Alford 1991). Institutional logics informs us that silos, by their very nature, result in closed system operations. Additionally, and in alignment with Brown's (2017) research, collaboration and information dissemination opportunities are stunted in a closed system such as this. Furthermore, the lack of communication around assessment and the use of

results may lead to missed opportunities (Wilcock, 2013) for synergy. Siloed operations exist when a group of individuals are separated physically or through an absence of communication. These structures result, according to institutional logics (Brown, 2017, Friedland & Alford, 1991) typically from external influences such as the needs of specialized accreditation. Participants specifically noted a lack of synergy, alongside a lack of visible connections, which was detailed as the first major finding of this study.

Pre-Cycle Research Question Two. *How do academic administrators describe the pervasiveness of assessment-related collaborative decision-making?* Academic administrators who participated in this study described relatively low levels of collaboration on issues of assessment across the institution at the onset. There existed an overall lack of organizational clarity relative to who, at the University, was tasked with carrying out assessment activities. Beyond not knowing who is involved in assessment efforts, participants also conveyed a lack of understanding as to what actions were being carried out in closing of the loop process. One hallmark of siloed operations is the absence of communication. Institutional logics (Thornton & Ocasio, 1999) helps to explain the absence of communication, namely specialized accreditation's influence. Each academic school contains programs that hold programmatic or specialized accreditation. And each of these programs have placed upon it standards and requirements unique to that program and that academic school. The manner in which the people who support these programs operation including the unique processes developed to support these programs have evolved only to serve the needs of those differing accreditations. Different programmatic accreditation bodies in different industries result in different practices, values, and rules influence how individuals, or in this case,

academic program support systems. Institutional logics suggest that these differences in how programs, and program supports, organize themselves and their assessment processes is a reflection of symbolic and materials patterns that shape decision making (Thornton & Ocasio, 1999). As such programs have evolved on their own sans influence from other, perhaps more standardized, organizational requirements. Danley-Scott and Scott (2014) used the word "divide" to reflect the ongoing struggle between accreditors, administrators and faculty relative to assessment. This "divide" can and does also occur between administrators at Mountain State University who oversee programs with differing specialized accreditation.

The PAC also reflected on the issues of tolerance transparency noted in Chapter Four. These concerns, espoused by the PAC members relative to academic leaders showing reluctance in sharing widely assessment data indicating lower levels of student achievement, served as a secondary driving force for silo existence and evolution.

Evident in Major Finding 1, Synergized and Visible Connections, participants cited minimal line of sight to assessment activity, through myriad administrative echelons. Participants noted that information does not move up and down through University divisions in any predictable or reliable fashion and is often obscured by the layers through which it travels. This lack of clear information sharing hinders collaborative discussions as well as precludes collaborative actions and presented clearly in the first major finding of this study as participants called for more synergy and more visibility throughout the process.

Participants described both low visibility and a lack of synergy around the use of assessment results. Three of the academic schools encapsulate programs with specialized

accreditation. Accreditation and compliance was cited frequently by participants as a causal factor for the siloed nature of assessment efforts within the schools. The nature of the siloed operations was perceived as necessary to facilitate insular autonomy with respect to responding to the needs of the specialized accreditor. Additionally, the relatively limited connection points between schools supported more siloed, and independent, operations. Additionally, participants in this study espoused a clear desire for more synergy and more collaboration noting that the legacy influences of specialized accreditation-driven resource allocation persisted. This is reflective of the principles of institutional logics (Brown, 2017; Friedland & Alford, 1991). Participants further noted that future efforts with garnering new or sustaining existing specialized accreditation, coupled with the newer centralized assessment model, make for a tighter and more collaborative assessment effort.

Pre-Cycle Research Question Three. *How are institutional logics reflected in the evolution of assessment's use-of-results process and culture?* At Mountain State University, the structure of the academic division is itself reflective of a symbolic construction. Within the division exist academic schools, the Office of the Provost, and student support services e.g., advising. Within the Office of the Provost exists the Office of Learning Outcomes. Inside the Office of the Provost exists a set a material practices that regulate and centralize assessment efforts by the academic schools. The nature of these practices follow and cite scholarly best practices in assessment methodology. However, little attention is paid to the question of siloed decision-making post assessment. Participants in this study noted that the centralized assessment model was relatively new, having emerged only in the last three years. Prior to this centralized

model, participants stated that each academic school was left to fend for itself, in terms of assessing student achievement and engaging in closing of the loop.

The interconnections and dynamics between people and process lent a depth to this study consistent with the "cross-level" research commonly found in institutional logics research (Thornton & Ocasio, 2008). Participant positivity, evidenced in Chapter Four, emerged as one specific example of institutional logic's material practices at work. PAC participants were all support of engaging in, and enhancing through PAC efforts, the use of assessment results practices. Their individual driving forces behind such perspectives varied, however they were aligned none the less.

Cycle One Research Questions

Cycle One Research Question One. *How has collaboration around the use-of-results assessment model changed?* Change among the collaboration efforts relative to the use of assessment results model at Mountain State University is visible through a comparison between the onset and conclusion of this study. At the onset of this study participants noted a lack of communication and a lack of collaboration around the use of assessment results. This evolved to an operationalization of needs resulting in ideas of how to create greater visibility by all constituents as well as practical means to increase collaboration. The study concluded with participants discussing how to sustain these changes through policy and procedure codification at Mountain State University. This, itself, is another reflection institutional logics (Brown, 2017: Friedland & Alford, 1991) at work in that policy codification is perceived by the PAC members as a symbolic construction lending credence to the effort. The development and implementation of a

communication/collaboration Professional Assessment Community (PAC) Action Plan was conducted.

In the course of this study, participants noted key factors missing from their desired communication and collaboration utopia. Specifically, the ongoing posting of assessment results and use of said results, accessible to all staff, was espoused and captured in the first phase of the PAC Action Plan. All assessment results and action plans, which detail the decisions made by the Dean of each school in terms of how the data will be used, will be posted on a secure portal accessible by staff.

Participants noted a lack of clear, assigned, duties within the assessment and use of results processes and poignantly within the closing of the loop efforts. The PAC Action Plan, thusly, identifies specific individuals as being responsible for presenting assessment results and closing of the loop action plans to existing forums as a means of enhanced information sharing. The intentions of the PAC with respect to these aspects of their action plan relate to a perceived need for increased collaboration. The action plan itself manifesting as a means for driving change relative to collaboration both up and down through divisional hierarchy. Reflected in the PAC's efforts to drive change are Bolman and Deal's (2008) structural frame role and responsibility dynamics. Brown (2017 and Andrade (2011) support the need for a critical understanding of these dynamics during silo integration efforts. Participants in this study perceived a clear lack of downward directive relative to collaboration around the use of assessment results. Acting as change agents, the PAC is attempting to increase collaboration through policy, formalization of reporting duties, and expanded sharing of information by way of their PAC action plan. This effort reflects the engagement aspect of the three-pronged

approach to silo integration formulated by comping the work of Brown (2017), Andrade (2011), and Wilcock (2013).

In the course of this study, participants also cited curricular connections as a major finding. Within one aspect of this finding, participants reverse engineered their assessment mapping efforts, which aim to connect institutional outcomes to program outcomes and program outcomes to course outcomes. Because school officials were asked to map program specific outcomes to institutional outcomes and courses, and because institutional outcomes are a fixed set, one at the undergraduate level and one at the graduate level, participants realized they had created a natural connection point and further related that connection point to the use of assessment results. For example, if School A assessed a program whose outcome was mapped to Undergraduate Institutional Outcome (UIO) 1 and School B assessed a different program whose outcome was also mapped to UIO1 then whatever use of results actions the schools decided upon in a siloed fashion would be affect UIO1. This effort was one of consolidation which is one of Brown's (2017) silo integration strategies, as content was unified across silos, in this case through utilization of the common set of institutional learning outcomes.

In the discussion and action planning for a more integrated approach, participants noted that if both schools collaborated on their use of results, they believed the effect on UIO1 could be enhanced exponentially. Participants agreed that since their disparate decisions ultimately lead to an intended improvement at the institutional (UIO) level, collaboration around the use of results was logical at the program level. This discourse emerged from the theme of curricular connections and supported the pervasive theme of synergy.

Cycle One Research Question Two. *What redundant use-of-results assessment activities have been identified and removed?* According to participants in this study, Mountain State University's assessment and use of results system was one that was, for the most part, already on a stable track with minimal redundancy. Some participants cited the completion of the Aqua project starter kit, which precedes each assessment, as a redundancy.

The Office of Learning Outcomes manual for assessment dictates that each academic program will be assessed in its entirety over a three year cycle. A portion of program outcomes will be assessed each year and from each assessment an action plan must be produced which documents the use of assessment results. Starter kits require school officials to confirm outcome accuracy, map program outcomes to institutional outcomes, courses, and course outcomes. Starter kits required school officials to build outcome-specific rubrics to be used in assessing student artifacts. And this process repeats for each outcome until the entire set of program outcomes has been assessed within a three-year period. Participants noted that, especially with respect to the mapping efforts, these efforts are sometimes redundant. However, participants acknowledged that all of the content produced during starter kit development are entered into a database and that during the next three-year cycle, the creation and launch of an assessment project, assuming no changes are needed, should be automated without the need for additional work.

Participants acknowledged the one-time nature of starter kit completion and as such it did not reflect as an option for redundancy elimination, which was another strategy from the three-pronged approach to silo integration compiled from the work of

Brown (2017), Andrade (2011), and Wilcock (2013). Given this, there appear to be no redundancies identified or eliminated based on this study.

Cycle Two Research Questions

Cycle Two Research Question One. *How have the roles and responsibilities of academic administrators changed in the move towards an integrated use-of-results assessment model?* For those academic administrators who participated on the PAC, their roles have changed in that their duties have been expanded to include a role in which they are a critical information provider for their peers relative to the use of assessment results. These roles were established in the PAC action plan. The PAC Action Plan further expands the duties of each PAC member by assigning them to transmit assessment results and action plans to their assigned forum, lead discussion about said data, and to capture/relay feedback to the PAC. The participants in this study discussed methods for the relaying of feedback to the PAC however this may be an area of future research. Additionally, participants in this study discussed the notion of an assessment champion likening their role on the PAC to that of an assessment collaboration evangelist for the institution. This was a more implied role than a documented one. PAC members agreed voluntarily to accept these additional duties as they perceived the value of these new meaningful practices which are focused on fulfilling specific goals (Ndoye & Parker, 2010). These efforts by the PAC members, as other recommendations in this chapter, serve to foster an appropriate culture of assessment which is accepted as not being able to survive in a silo (Brock et al., 2007; Lakos & Phipps, 2004; Ndoye & Parker, 2010; Suskie, 2004) and one that fits Mountain State University's unique niche in higher education.

Finally, participants discussed codifying not only the PAC and its scope in policy and procedure but also the roles of each participant in accordance with the PAC Action Plan. Participants noted their perception that processes codified in institutional policy tend to draw more resources and attention. The end game for PAC participants in their call for policy-level codification was in line with their perception that assessment operations require sufficient resources to be successful. The relationship between successful assessment efforts and adequate resources is well documented in literature (Brock et al., 2007; Lakos & Phipps, 2004; Ndoye & Parker, 2010). The PAC's perception and desire catalyzed their desire to formalize the PAC in University policy alongside role and responsibility delineation in adjacent University procedural documentation. Their beliefs in this area are supported by the literature related to institutional logics. Brown (2017) cites one of the three components of institutional logics, the state, as an influencing social institution capable of attracting resources and attention and driving action. I have likened Brown's "state" to that of institutional policy which appears to have the same capability. Participants in this study appear to agree with this comparison and have attempted to leverage institutional policy and procedure for the same purposes.

Cycle Two Research Question Two. *What impact has the PAC had on the closing-the-loop process?* From the qualitative data gleaned in this study, the impact of the PAC on closing-the-loop processes has been, primarily, increases in transparency, information sharing, and collaborative discourse. The efforts of the PAC, through development and implementation of the PAC Action Plan, intended to create more widespread sharing of assessment results and the actions derived from them. The PAC's

work is intended to build up momentum around how Mountain State University collaborates with its closing the loop process (DuFour & Eaker, 1998) through role and responsibility clarification and increased information sharing. The envisioned changes, specifically the prominence given to the PAC through policy codification and the publicly identified champions of information sharing and collaborative discourse will shape new institutional logics for Mountain State University. These actions embody the closing of the loop process itself as they drive change for program improvement.

Appearing as major finding 1, synergized and visible connections, interviewees noted a desire to create more synergy and visibility around the assessment and use of results efforts. The PAC's move toward increasing transparency of process through synergized and visible connections, a major finding of this study, reflects the PAC's perceived need for connecting disparate use-of-results silos as well as bringing them to the surface. The identification and codification of specific roles that academic administrators will play within the assessment and use of results processes was also a change that has impacted the process. As noted by interviewees, there was often ambiguity about who would engage in the use of results process and at what level. The PAC Action Plan is intended to reduce that ambiguity by clearly identifying positions and clearly delineating their task with respect this aspect of the process.

The PAC Action Plan also concretizes the sharing of information around the use of assessment results. The PAC action plan is an example of Dowd and Tong's (2007) intervention and new process adoption strategy working teams. As noted by interviewees, Mountain State University has many forums for discussion and information sharing, however these forums are not dedicated to a specific context nor do they have

any standing agendas. Due to the siloed nature of the assessment and use of results process, there was a lack of clarity relative to how these myriad forums were to be used for the specific function of sharing assessment data and serving as forums for discourse on the use of those data. The PAC Action Plan calls for specific documents, produced by the Office of Learning Outcomes, to be shared, by whom and with what frequency. These tasks range from posting use of results documents on an internal portal, accessible to all staff, to placing these items on meeting agendas for discussion and feedback.

Additionally, staff identified in the PAC Action Plan are tasked with leading a discussion about the data, the use of results decisions and relaying that information back to the PAC. It is the intention of the PAC that this sharing of information, discussion, and feedback loop would serve as the foundational layer of collaboration around the use of assessment results upon which to build future efforts.

From the quantitative data gathered within this study, and reflecting the broader viewpoint of the Academic Affairs Division, there did exist a perceptible shift by survey respondents when comparing the pre and post surveys. A 2.28% shift in perception and awareness of assessment and closing-the-loop related activities occurred moving *no presence* to *some presence*. Though this shift in the cycle three data did occur, PAC members noted, and as emerging as the theme of change/time association, that not enough time was available for the PAC action plan to have a substantive impact on the broader community. The PAC action plan was minimally executed, deployed in one instructional design meeting and one assessment developer meeting. The frequency of meetings identified for information sharing and discourse on the PAC action plan (table 2) span months, quarters, and even years. As such it would not have been feasible to

execute the entirety of this plan in this study. However, the PAC action continues to be executed at Mountain State University.

Evident in major finding 3, structural formalization and institutional commitment, PAC members believed that their action plan, deployed over the course of several months to several years would create sustained information sharing and cyclical discussion and collaboration around the use of assessment results. This was also a driving factor for their call for policy-level codification, to ensure that the action plan would have sufficient visibility and attention over time.

Cycle Three Research Questions

Cycle Three Research Question One. *How has the integrated model shaped the University's culture of assessment?* At the conclusion of this study, PAC members noted two major concepts relative to the University's culture of assessment. First, PAC members were exceptionally positive about the changes that had been implement thus far, i.e., the clarification of individuals assigned to support silo integration and the methods detailed in the PAC Action Plan for how to do so. Additionally, the PAC members displayed high levels of enthusiasm for the future planning and changes to come. Specifically, PAC members were excited about the prospect of codification of the PAC in policy and procedure. The action of policy codification would create a new institutional practice or rule inside Mountain State University. New policy, in conjunction with the PAC's information sharing plan, and resulting in growing University awareness, has the potential to activate the three mechanisms that Thornton and Ocasio (1999) suggest shape organizations. Specifically, these new structures may 1) support the legitimacy of the integrated model, 2) encourage greater attention to the use of assessment results and 3)

expand the potential options for assessment process (Thornton & Ocasio, 1999). Manifesting as new institutional logics for Mountain State University, these mechanisms may improve the assessment and use of results operations. Additionally, the increased involvement of mentors in the use of results process, and the formalization of roles and associated training were planned actions that the PAC members universally supported. Though PAC members exhibited positivity and enthusiasm for this work, the overall culture of assessment did not display any substantive changes relative to assessment as was noted in the cycle three post survey data. This could be attributed to the relatively short time frame for execution of the PAC action plan.

The PAC members, through their work in PAC meetings and discussions, felt the assessment and use of results processes were insulated away from the majority of staff within the Academic Affairs Division. The development of the PAC Action Plan was intended to bridge this perceived gap. However, PAC members desired to expand the PAC membership and to include mentors as future PAC members. Additionally, they insisted on a rotational schematic whereby PAC members would rotate on and off the PAC over time, thus providing an opportunity for all academic school staff to participate and to ensure a significant portion of representation from the CLT. These decisions may, over time, impact the larger culture of assessment at the University. The PAC members did note that this, more widespread, effect would take time given the three-year cycle of assessment at Mountain State University.

Cycle Three Research Question Two. *What contributes to the sustainability of the integrated assessment use of results model?* Emerging in the latter two cycles of this study was a considerable focus on sustainment by the PAC members. Of specific note

was their desire for formalization of the PAC through development and/or refinement of existing policy and procedure. At Mountain State University, codification in policy is a laborious process that requires vetting, three internal approvals within Academic Affairs, Presidential approval and culminates with Board of Trustee approval. The average time for new policy development or policy change is a minimum of six months based on meeting cycles for the various approval entities. However, PAC members were clear in their desire that the PAC must be codified in policy. Resource allocation plays a critical role in understanding the PAC's request for policy codification. Policy codification is an example of a formal rule (Thornton & Ocasio, 1999) that may be evidence of evolving institutional logics at Mountain State University. Meyer and Rowan (1977) offer the notion that these rules are concrete driving forces for legitimacy, resource allocation, stability and sustainability (p.340).

Additionally, PAC members noted that there are other assessment-related committees in existence, e.g., the Curriculum Outcomes Assessment Steering Team who are not policy-drive. PAC members encouraged revisiting the additional structures of the University that are assessment related and to develop and policy and procedure that optimizes, including reducing overlap, of efforts.

Recommendations & Implications

Policy

The policy implications stemming from the findings of this study are two-fold. First, within institution-wide processes, the findings indicate that institutional policy is perceived as a tool of authorization. Within institution-wide processes, affecting multiple departments, even within the same division, institutional policy is perceived as a

legitimizing agent and also a synergy-driving change agent. The notion of policy-as-change-agent relates back to the concept of organizational inertia (Argyris, 1990; Fullan, 2007). Fullan described the concept of change agency from an external perspective. However, the findings of this study suggest that institutional policies and procedures may serve a similar role as a change agent, due to their perceived legitimizing and authorizing directives by administrators. Within this we see a shift from policy as an agent of change to that of policy as a tool of authorization.

Mountain State University should codify the PAC's role and responsibility in University policy with identified and dedicated human et al., resources necessary to continue the execution of the PAC action plan. This action would allow the PAC to serve as an agent of change, formally authorized by University policy. Wilcock (2013) noted that the lack of change contributes toward organizational stasis, which is one of Wilcock's twelve costs of non-collaboration for an organization. The findings of this study suggest that Mountain State University, in terms of assessment and use of results efforts, are not mired in organizational stasis as pockets of work continue forward. The individual efforts of each silo have allowed for siloed decision-making around the use of assessment results. However, these decisions are uninformed by the decisions of other silos and thus lacks the benefit of synergy (Brown, 2017, Wilcock, 2013). The data support the need for more widespread engagement and collaboration, one of the elements of the three-pronged synthesized approach (Andrade, 2011; Brown, 2017: Wilcock, 2013) identified in Chapter 2. The data suggest, corroborated by the literature that increased engagement and collaboration may result in a stronger and more efficacious assessment effort.

Practice

The purpose of this study was to leverage the perceptions and experiences (Stringer, 2007) of academic administrators, on the use of assessment results, at Mountain State University to disrupt the negative aspects of silo-based decisions around the use of assessment results. In many respects while codification of these intentions through institutional policy may provide clear directionality toward collaboration and synergy, it is within the realm of practice that true synergy will be achieved. Action research is a cyclical model (Elliott, 1991) which typically requires iterative changes over time in practice to bring about improved efforts. There are plans to continue executing the PAC action plan at Mountain State University.

In practice, PAC members should continue to serve as the connection agents between academic schools and related functions such as the CLT to share information, lead discussion, serve as a feedback mechanism and ultimately influence decisions relative to how the University uses its assessment data to drive program improvement. Institutional policy changes may support this work through establishment of the PAC as a working structure of the University. Policy may additionally direct intended increases in participation from appropriate staff or mentors. Policy may also provide accountability pressures. However, policy alone will not manifest itself as synergies in the closing-the-loop process (Banta & Blaich, 2011; Ewell, 2001). In practice, the members of the PAC will ultimately ensure the sharing of information, the action of discourse, reflection, and informed and collaborative decision-making.

Additionally, in addressing Danley-Scott and Scott's (2014) concerns about the divide between accreditors, administrators, and faculty, the PAC serves as the theoretical

and practice forum where this divide can be bridged. PAC members represent both administrators and mentors, the latter of which serve as faculty in Danley-Scott and Scott's (2014) categorization. The structural solution of the PAC, especially one codified in University policy as recommended by this study, would allow for the differing viewpoints on assessment practices to be discussed and iterated upon in an ongoing manner ostensibly meeting the needs of both administrative and mentor-related perspectives.

There exists an additional dimension to the divide even within the administrator category at Mountain State University. The Academic Affairs Division has one sub unit which contains all of the instructional designers and assessment developers. Adjacent to that unit, albeit loosely connected, are the academic schools. Assessment data is produced by the Office of Learning Outcomes through collaboration between both academic schools and the instructional design/assessment development unit. However, assessment data are analyzed by the academic schools in isolation and the instructional design/assessment development unit is only engaged when a clear action is being promulgated by the academic school e.g., addition of course content in a specific area. In these instances the instructional design/assessment development unit has little information relative to the origins of the change. As such there is a gap of information between those who are making decisions and those who are architecting the learning experiences. The PAC's answer to bridging this gap is seen in the PAC action (table 2). The action plan calls for more collaboration through identified forums, role and responsibility clarification, and the sharing of data sets, thought processes, and resulting action plans between both of these sub units.

A second element of the silo integration strategy used in this study was consolidation (Andrade, 2011; Brown, 2017: Wilcock, 2013). This strategy called for the unification of content between silos, with content being defined as practices, polices, procedures, roles, and responsibilities. The findings of this study support more consolidation and clarification of roles and responsibilities. Andrade (2011) specifically noted the need to create layers of accountability, through role and responsibility consolidation and clarification, for effective and efficient assessment and use of results efforts. The findings of this study, aligned with the consolidation strategy of silo integration (Andrade, 2011; Brown, 2017; Wilcock, 2013), suggest that each academic school does not benefit from a separate definition of roles or responsibilities and that a unified definition may aid silo integration efforts. Additionally, consolidating these various definitions may help support the PAC desired public accountability through identified forums for assessment results sharing and use of results discourse seen in both major finding one and three.

The final strategy of the three-pronged approach to silo integration was elimination (Andrade, 2011; Brown, 2017; Wilcock, 2013). Citing infrastructure reorganization and reducing unproductive conflict due to ambiguity, Wilcock (2013) argued that these elements thwart authentic and efficient productivity. Through formalization, training, and inclusivity operationalization, and in allowing the PAC to centralize and coordinate the efforts between existing silos, Mountain State University may see a reduction in redundancy of effort relative to assessment and use of results. I believe a natural byproduct of these elimination efforts will yield greater synergy as more

transparent and open access to information will occur alongside more opportunities for collegial collaboration and debate.

Leadership

The purpose of this study was to disrupt the negative aspects of silo-based decision-making around the use of assessment results at Mountain State University. With particular focus on Wilcock (2013), those negative attributes include increased costs and undue burdens including redundancy. The structural solution of the PAC implemented in the course of this study counters both of those negative attributes. The increase in collaboration, information sharing, and leveraging of common assessment data-driven decisions for improvement in student learning can potentially reduce costs through a reduction in administrator time spent in silos analyzing the same data set across five academic schools. Additionally, in this same vein redundant data analysis, recommendations, and intervention strategies are inherently reduced via transparent and communicated collaboration. Siloed decisions become joint decisions in this model and further these decisions are widely communicated and holistically executed regardless of academic discipline where appropriate, as in the case of general education program improvements.

Additional implications for leadership at Mountain State University are such that the three-pronged strategy for silo integration used in this study may be applicable to other areas of the University beyond assessment. Likewise, the negative attributes of siloed structures (Andrade, 2011 & Brown, 2017) would most likely be found elsewhere at Mountain State University in a similar fashion as they have emerged relative to the assessment and use of results process, given the commonality of the University's

evolution. Mountain State University academic and non-academic leadership may find that deploying the three-pronged approach to silo integration in their respective contexts may disrupt the aforementioned negative consequences of silos.

Research

This research study is a continuation of the broader efforts of silo integration in the higher education community. This study builds upon the work of Brown (2017), Andrade (2011), Ndoye and Parker (2010, and Wilcock (2013) as it explored strategies, through the lens of experienced academic administrators at Mountain State University, to integrate siloed use of assessment results efforts. Influenced by the study of institutional logics (Brown, 2017; Friedland & Alford, 1991; Thornton & Ocasio, 1999) and following a roadmap of silo integration theory (Andrade, 2011; Brown, 2017; Ndoye & Parker, 2010; Wilcock, 2013), this student aimed to apply these principles to a real-world silo-based problem. Existing literature on this topic is primarily theory, with a dearth of research-based practical application examples.

The findings in this study may be used to further the research into silo integration strategies for higher education. A continuation of this study would call for the policy codification efforts to be undertaken and to allow for sufficient time to train and rotate memberships through the PAC during a full three-year assessment cycle. This may allow for an expanded investigation into the effect of the PAC on the larger culture of assessment. Akin to Elliott's (1991) progression and evolution of data over time is the nature of action research which requires time to effectively disrupt long-standing institutional practices (Stringer, 2007). The full assessment cycle at Mountain State University is three years. In order to be able to fully realize the impact of the PAC action

plan, the research project should be continued for the full three years with additional time allocated thereafter for potential institutional impact data collection and analysis.

Additionally, the strategies leveraged from this existing research, and potentially also future research of this nature, may also be replicable in other non-assessment related siloed operations of a higher education institution. The principles of silo integration and the strategy used in this study, i.e., engagement, elimination, and consolidation (Andrade, 2011; Brown, 2017; Wilcock, 2013) could be applied in other contexts beyond assessment practices and use of results decision processes. This type of extended research may serve to determine how applicable this three-pronged strategy for silo integration is in other contexts.

Limitations

Contextualizing this study are the inherent limitations of action research which stem from the practical issues of conducting research in a setting that I am currently employed within. The primary limitation I have contended with was time. This study originally called for four cycles of research with a total of six working PAC meetings to be held, with two PAC meetings planned for each cycle one through three. After the first two PAC meetings in cycle one, it became clear that there was significantly more discussion being generated during PAC meetings and as such more PAC meetings were added to the schedule. A total of six PAC meeting were held in cycle one alone. In cycle two we conducted four PAC meetings. In cycle three another four PAC meetings were conducted. The study itself commenced on June 15, 2020 and the final group interview was conducted on December 9, 2020. Additionally, the PAC action plan was only partially implemented. This was due to the scheduling of meetings and venues identified

in the PAC plan and their formal scheduling throughout the academic year. Additionally, Mountain State University operates with a three-year assessment cycle. PAC members believed, and I concur, that this study should persist forward through the entire three-year assessment cycle and then call for additional data collection, relative to institutional impact, thereafter. The institutional learning emerging from a study persisting through the entirety of one full assessment cycle would itself require additional time relative to allowing for organizational change (Fullan, 2007). The implications present show how, despite going through four cycles of action research, I was not able to fully capture the entirety of possible impacts resulting from each individual cycle. Future research endeavors of this nature will require more time to fully assess cyclical impacts both locally and more broadly across the University. Fullan (2007) asserted that organizational change requires a significant time allotment for meaningful and lasting change to occur. Institutional logics also calls attention to the role of time, in terms of historical periods, in shaping organizational influences; Thornton and Ocasio (1999) suggest that logics change as a function of time. A conducive environment for change is a construct of the existing logics at that time and as logics change so too can the environment.

A secondary limitation that I faced in the course of this study was related to the concept of transparency tolerance. In the context of this study, transparency tolerance was used to describe the threshold of public sharing academic leaders at Mountain State University would tolerate before their own personal discomfort would cause a cessation of sharing. PAC members, who are not included in my definition of academic leaders for the purposes of this section, appeared to work around this issue at times and in other areas to directly confront this tolerance issue. This is evident in the PAC action plan

having concretely identified specific people and specific venues for the required information sharing and desired collaboration efforts.

Lastly, in the course of this study my own role at Mountain State University changed. My role was expanded to include a broader institutional focus though I still maintained oversight of institutional effectiveness, assessment, and accreditation but at an arm's length. The continuation of this research would, in all pragmatic terms, now fall to a newly hired Director of Assessment. My advice for the continuation of this research would certainly focus on the codification and formalization of the PAC as well as their developed action plan.

Conclusion

This research project revealed the extent to which assessment and closing the loop efforts at Mountain State University are siloed, contrasted by an authentic desire of those academic administrators at the core of the assessment effort for synergy, clarity, opportunities for discourse, and policy-level legitimacy to continue their work. These silos, present with the Academic Affairs division, manifest as pockets of inefficiency and redundancy which are negatively affecting the overall assessment and use of results process. The PAC action plan developed and initially implement serves as a first step toward increasing engagement, eliminating inefficiencies, and consolidating redundant assessment efforts (Andrade, 2011; Brown, 2017; Wilcock, 2013).

While the research indicated only a minor shift in the perception and awareness of assessment-related activities by the larger division of Academic Affairs, it provides a foundation on which to continue the dialogue about information sharing, transparency tolerance, and change agency.

The study further revealed a gap between the activities of assessment and use of results and how those are translated into benefits for students, current and prospective. It is clear that the authentic purpose of assessment, beyond accreditation or other compliance needs, is a mission-driven force to continuously improve the learning experiences for students resulting in more well-prepared graduates of the University. Though those benefits are often shrouded and inaccessible by students. The future of assessment practice at Mountain State University should be in developing policies and procedures, engaging appropriate constituencies through transparent forums for discourse, and elevating the rationale and outcomes of assessment efforts. These directions may lead to a more cohesive and transformative culture of assessment.

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Appendix A

MSCHE Rubric Survey Instrument

Figure A1

MSCHE Rubric Instrument

Rubric for Evaluating Institutional Student Learning Assessment Processes

This is intended for institutions to use as a tool to help them assess the status of their current assessment efforts in terms of Middle States' accreditation standards and expectations. This tool is **not** intended to be used by any evaluators or to prescribe specific Commission actions regarding the institution.

No plans = **No documented evidence that the institution has plans** to do this.
No evidence = The institution appears to be aware that it should do this, but there is **no documented evidence that this is happening**.
A few areas = The institution has documented evidence that this is happening **in just a few areas** (for example, only in programs with specialized accreditation).
Some areas = The institution has documented evidence—not just assurances—that this is happening **in some but not most areas** (for example, in a number of academic programs but not yet in general education)
Most areas = The institution has documented evidence—not just assurances—that this is happening **in most but not all areas**.
Everywhere = The institution has documented evidence—not just assurances—that this is happening **everywhere**.

	For academic programs, the general education curriculum, and institutional goals articulated in the mission statement, vision statement, or elsewhere:	No plans	No evidence	A few areas	Some areas	Most areas	Every-where
1	Institutional leaders demonstrate sustained—not just one-time or periodic—support for promoting an ongoing culture of assessment and for efforts to improve teaching.						
2	Clear statements of expected learning outcomes at the institutional, unit, program, and course levels have been developed and have appropriate interrelationships.						
3	Those with a vested interest in the learning outcomes of the institution, program, or curriculum are involved in developing, articulating, and assessing them.						
4	Statements of program-level expected learning outcomes are made available to current and prospective students.						
5	Course syllabi include statements of expected learning outcomes.						
6	Targets or benchmarks for determining whether student learning outcomes have been achieved have been established and justified; the justifications demonstrate that the targets are of appropriate college-level rigor and are appropriate given the institution's mission.						
7	Multiple measures of student learning, including direct evidence, have been collected and are of sufficient quality that they can be used with confidence to make appropriate decisions.						
8	The evidence of student learning that has been collected is clearly linked to expected learning outcomes.						
9	Student learning assessment results have been shared in useful forms and discussed with appropriate constituents, including those who can effect change.						
10	Student learning assessment results have been used to improve teaching and by institutional leaders to inform planning and budgeting decisions.						
11	In any areas in which the above are not yet happening, concrete, feasible, and timely plans are in place.						
12	Assessment processes have been reviewed and changes have been made to improve their effectiveness and/or efficiency, as appropriate.						
13	There is sufficient engagement, momentum, and simplicity in current assessment practices to provide assurance that assessment processes will be sustained indefinitely.						

Appendix B

Mountain State University Academic Affairs Division Organizational Chart

Redacted for Privacy

Appendix C

Detailed Data Collection Alignment Matrix

Table C1

Detailed Data Collection Alignment Matrix

Research Question	Theory	Data Source	Analysis Technique
Pre Cycle			
RQ1: How do academic administrators at Mountain State University describe the assessment process's use-of-results efforts as they relate to being integrated or siloed?	Institutional Logics (Brown, 2017; Thornton & Ocasio, 2008)	*MSCHE Questionnaire:* 2. Clear statements of expected learning outcomes at the institutional, unit, program, and course levels have been developed and have appropriate interrelationships. 3. Those with a vested interest in the learning outcomes of the institution, program, or curriculum are involved in developing, articulating, and assessing them. 5. Course syllabi include statements of expected learning outcomes. 6. Targets or benchmarks for determining whether student learning outcomes have been achieved have been established and justified; the justifications demonstrate that the targets are of appropriate college-level rigor and are appropriate given the institution's mission. 9. Student learning assessment results have been shared in useful forms and discussed with appropriate constituents, including those who can effect change. *Semi-Structured Individual Interviews:* Q1: What is Mountain State University's assessment process? Q2: How, if at all, are assessment data used across units? Q3: How are assessment data, and use of results efforts, communicated throughout Academic Affairs and the institution as a whole?	MSCHE Questionnaire: Simple Descriptive Statistics *Semi-Structured Individual Interviews:* First Cycle Process Coding (Saldana, 2013) Second Cycle Focus Coding (Saldana, 2013)
RQ2: How do academic administrators describe the pervasiveness of assessment-related collaborative	Institutional Logics (Brown, 2017; Thornton & Ocasio, 1999, 2008) Silo Integration Theory (Andrade, 2011; Brown, 2017; Ndoye & Parker, 2010; Wilcock, 2013)	*MSCHE Questionnaire:* 3. Those with a vested interest in the learning outcomes of the institution, program, or curriculum are involved in developing, articulating, and assessing them. 6. Targets or benchmarks for determining whether student learning outcomes have been achieved	MSCHE Questionnaire: Simple Descriptive Statistics

decision-making?		have been established and justified; the justifications demonstrate that the targets are of appropriate college-level rigor and are appropriate given the institution's mission. 7. Multiple measures of student learning, including direct evidence, have been collected and are of sufficient quality that they can be used with confidence to make appropriate decisions. 9. Student learning assessment results have been shared in useful forms and discussed with appropriate constituents, including those who can effect change. 10. Student learning assessment results have been used to improve teaching and by institutional leaders to inform planning and budgeting decisions. 12. Assessment processes have been reviewed and changes have been made to improve their effectiveness and/or efficiency, as appropriate. *Semi-Structured Individual Interviews:* Q1: Within your school, how would you describe the collaborative nature of your school with respect to using assessment data? Q2: Please provide an example of your school's use of assessment data and who was involved. Q3: Have you seen any examples of collaborative decision-making around the use of assessment results at Mountain State University and if so, can you describe what you saw? Q4: Overall, what is your perception of Mountain State University's use of assessment data efforts as they relate to collaboration?	*Semi-Structured Individual Interviews:* First Cycle Process Coding (Saldana, 2013) Second Cycle Focus Coding (Saldana, 2013)
RQ3: How are institutional logics reflected in the evolution of assessment's use-of-results process and culture?	Institutional Logics (Brown, 2017; Thornton & Ocasio, 1999, 2008)	*MSCHE Questionnaire:* 1. Institutional leaders demonstrate sustained—not just one-time or periodic—support for promoting an ongoing culture of assessment and for efforts to improve teaching. 4. Statements of program-level expected learning outcomes are made available to current and prospective students. 5. Course syllabi include statements of expected learning outcomes. 6. Targets or benchmarks for determining whether student learning outcomes have been achieved have been established and justified; the justifications demonstrate that the targets are of appropriate college-level rigor and are appropriate given the institution's mission.	MSCHE Questionnaire: Simple Descriptive Statistics

		7. Multiple measures of student learning, including direct evidence, have been collected and are of sufficient quality that they can be used with confidence to make appropriate decisions. 8. The evidence of student learning that has been collected is clearly linked to expected learning outcomes. 9. Student learning assessment results have been shared in useful forms and discussed with appropriate constituents, including those who can effect change. 10. Student learning assessment results have been used to improve teaching and by institutional leaders to inform planning and budgeting decisions. 12. Assessment processes have been reviewed and changes have been made to improve their effectiveness and/or efficiency, as appropriate. 13. There is sufficient engagement, momentum, and simplicity in current assessment practices to provide assurance that assessment processes will be sustained indefinitely. *Semi-Structured Individual Interviews:* Q1: What is your understanding of the historical evolution of Mountain State University's assessment and use-of-results efforts to date? Q2: What practices does Mountain State University engage in today with respect to the use of assessment results? Q3: How does Mountain State University use its assessment data? When and who use assessment data? Q4: What do you see as the value of using assessment data at Mountain State University? Q5: Thinking about collaboration and communication, how are decisions stemming from assessment results shared, communicated to the broader division of Academic Affairs and the institution as a whole? Q6: What is your perception of Mountain State University Leaderships' support of assessment and assessment data-driven decisions?	*Semi-Structured Individual Interviews:* First Cycle Process Coding (Saldana, 2013) Second Cycle Focus Coding (Saldana, 2013)
Cycle I			
RQ1: How has collaboration around the use-of-results assessment	Institutional Logics (Brown, 2017; Thornton & Ocasio, 1999, 2008)	*Group Interview:* Q1: How would you describe the collaboration around Mountain State University's assessment process, specifically with respect to the use-of-results?	*Group Interviews:* First Cycle Process Coding (Saldana, 2013)

model changed?	Educational Change Theory (Fullan, 2007; Glickman & White, 2007) Silo Integration Theory (Andrade, 2011; Brown, 2017; Ndoye & Parker, 2010; Wilcock, 2013)	Q2. Do you see Mountain State University's use-of-results collaboration across the schools as having changed and if so how?	Second Cycle Focus Coding (Saldana, 2013)
RQ2: What redundant use-of-results assessment activities have been identified and removed?	Educational Change Theory (Fullan, 2007; Glickman & White, 2007) Silo Deconstruction Theory (Andrade, 2011; Brown, 2017; Ndoye & Parker, 2010; Wilcock, 2013)	*Group Interview:* Q1: What assessment and use-of-results activities do you feel are redundant? Q2: What assessment and use-of-results activities do you feel are unnecessary? Q3: What processes have been eliminated as a result of the PAC thus far? Q4: What impact has the PAC had on collaboration, integration of efforts, and communication?	*Group Interviews:* First Cycle Process Coding (Saldana, 2013) Second Cycle Focus Coding (Saldana, 2013)
Cycle II			
RQ1: How have the roles and responsibilities of academic administrators changed in the moved towards an integrated use-of-results assessment model?	Educational Change Theory (Fullan, 2007; Glickman & White, 2007) Silo Integration Theory (Andrade, 2011; Brown, 2017; Ndoye & Parker, 2010; Wilcock, 2013)	*Group Interview:* Q1: What are the responsibilities of academic administrations with respect to the use of assessment results? Q2: Who, within each school, are responsible for this use? Q3: Who outside of the schools have a role in assessment and the use of results? What roles do they play? Q4: What impact has the PAC had on the responsibilities around assessment and use-of-results at Mountain State University?	*Group Interviews:* First Cycle Process Coding (Saldana, 2013) Second Cycle Focus Coding (Saldana, 2013)
RQ2: What impact has the PAC had on the closing-the-loop process?	Educational Change Theory (Fullan, 2007; Glickman & White, 2007) Silo Integration Theory (Andrade, 2011; Brown, 2017; Ndoye & Parker, 2010; Wilcock, 2013)	*Group Interview:* Q1: Please describe any changes in the closing-the-loop process you have observed through your interaction with PAC. Q2: What, if any, observations around closing-the-loop efforts have you observed outside the PAC's meetings? Q3:Do you, and please explain why, feel that Mountain State University's use-of-results efforts are more or less integrated now than when the PAC began?	*Group Interviews:* First Cycle Process Coding (Saldana, 2013) Second Cycle Focus Coding (Saldana, 2013)

Cycle III			
RQ1: How has the integrated model shaped the University's culture of assessment?	Institutional Logics (Brown, 2017; Thornton & Ocasio, 1999, 2008) Educational Change Theory (Fullan, 2007; Glickman & White, 2007) Silo Integration Theory (Andrade, 2011; Brown, 2017; Ndoye & Parker, 2010; Wilcock, 2013)	*MSCHE Questionnaire:* 1. Institutional leaders demonstrate sustained—not just one-time or periodic—support for promoting an ongoing culture of assessment and for efforts to improve teaching. 2. Clear statements of expected learning outcomes at the institutional, unit, program, and course levels have been developed and have appropriate interrelationships. 3. Those with a vested interest in the learning outcomes of the institution, program, or curriculum are involved in developing, articulating, and assessing them. 4. Statements of program-level expected learning outcomes are made available to current and prospective students. 5. Course syllabi include statements of expected learning outcomes. 6. Targets or benchmarks for determining whether student learning outcomes have been achieved have been established and justified; the justifications demonstrate that the targets are of appropriate college-level rigor and are appropriate given the institution's mission. 7. Multiple measures of student learning, including direct evidence, have been collected and are of sufficient quality that they can be used with confidence to make appropriate decisions. 8. The evidence of student learning that has been collected is clearly linked to expected learning outcomes. 9. Student learning assessment results have been shared in useful forms and discussed with appropriate constituents, including those who can effect change. 10. Student learning assessment results have been used to improve teaching and by institutional leaders to inform planning and budgeting decisions. 11. In any areas in which the above are not yet happening, concrete, feasible, and timely plans are in place. 12. Assessment processes have been reviewed and changes have been made to improve their effectiveness and/or efficiency, as appropriate.	*MSCHE Questionnaire:* Paired T-Test of Pre and Post Samples.

		13. There is sufficient engagement, momentum, and simplicity in current assessment practices to provide assurance that assessment processes will be sustained indefinitely. *Group Interview:* Q1: How would you describe Mountain State University's culture of assessment now, as it relates to what it was when the PAC began? Q2: Can you describe any perceived evolution at Mountain State University from silo-based decisions to more integrated efforts, with respect to use-of-assessment-results? Q3: To what extent do you feel the PAC has influenced the whole of Academic Affairs around collaboration and communication of use-of-results efforts?	*Group Interviews:* First Cycle Process Coding (Saldana, 2013) Second Cycle Focus Coding (Saldana, 2013)
RQ2: What contributes to the sustainability of the integrated assessment use of results model?	Institutional Logics (Brown, 2017; Thornton & Ocasio, 1999, 2008) Educational Change Theory (Fullan, 2007; Glickman & White, 2007) Silo Integration Theory (Andrade, 2011; Brown, 2017; Ndoye & Parker, 2010; Wilcock, 2013)	*Group Interview:* Q1: What actions do you recommend to preserve and sustain the PAC? Q2: What external forces pose a threat to a more integrated approach to use-of-assessment-results? Q3: What internal forces pose a threat to this integrated model? Q4: Who would you recommend to serve on a more permanent PAC? Q5: What logistical structures do you think need to be in place for a PAC to survive, i.e., meetings, communications plans, etc?	*Group Interviews:* First Cycle Process Coding (Saldana, 2013) Second Cycle Focus Coding (Saldana, 2013)

Appendix D

Semi-Structured Interview Protocol

Research Questions:

PC – RQ1: How do academic administrators at Mountain State University describe the assessment process's use-of-results efforts as they relate to being integrated or siloed?

PC – RQ2: How do academic administrators describe the pervasiveness of assessment-related collaborative decision-making?

PC – RQ3: How are institutional logics reflected in the evolution of assessment's use-of-results process and culture?

Interview Protocols:

(Note: It is the researcher's intent to interview all members of the Professional Assessment Community for the purposes of this study via a semi-structured interview process.)

Introduction:	Researcher will state the purpose of the research project, provide some information about the researcher and the current educational program for which this project is a requirement. Research participants will be informed of data usage and asked if audio recording is permissible. The informed consent document will be provided to the research participant at this time for signing.

Lead Questions:

1. Please describe your role at Mountain State University.

2. Please tell us how long you have been with Mountain State University.

Main Questions:

3. What is Mountain State University's assessment process?

4. How, if at all, are assessment data used across units?

5. How are assessment data, and use of results efforts, communicated throughout Academic Affairs and the institution as a whole?

6. Within your school, how would you describe the collaborative nature of your school with respect to using assessment data?

7. Please provide an example of your school's use of assessment data and who was involved.

8. Have you seen any examples of collaborative decision-making around the use of assessment results at Mountain State University and if so, can you describe what you saw?

9. Overall, what is your perception of Mountain State University's use of assessment data efforts as they relate to collaboration?

Context: Researcher will provided context relative to institutional logics to each research participant. This will be a read script as seen in Appendix F.

10. What is your understanding of the historical evolution of Mountain State University's assessment and use-of-results efforts to date?

11. What practices does Mountain State University engage in today with respect to the use of assessment results?

12. How does Mountain State University use its assessment data? When and who use assessment data?

13. What do you see as the value of using assessment data at Mountain State University?

14. Thinking about collaboration and communication, how are decisions stemming from assessment results shared, communicated to the broader division of Academic Affairs and the institution as a whole?

15. What is your perception of Mountain State University Leaderships' support of assessment and assessment data-driven decisions?

Probes: As Necessary

Follow Up Questions: As Necessary

Addendum: Informed Consent

Appendix E

Group Interview Protocol

Cycle One
Research Question

CI – RQ1: How has collaboration around the use-of-results assessment model changed?

CI – RQ2: What redundant use-of-results assessment activities have been identified and removed?

Interview Protocols:

(Note: It is the researcher's intent to interview the Professional Assessment Community [PAC] as a group for the purposes of this study via a group interview process.)

Introduction: Researcher will state the purpose of the research project, provide some information about the researcher and the current educational program for which this project is a requirement. Research participants will be informed of data usage and asked if audio recording is permissible. All research participants will have already signed informed consent forms.

Lead Questions:
1. The PAC recently conducted its first meeting. Please describe your reactions to the meeting and discussions we engaged in.

Main Questions:
2. How would you describe the collaboration around Mountain State University's assessment process, specifically with respect to the use-of-results?

3. Do you see Mountain State University's use-of-results collaboration across the schools as having changed and if so how?

4. What assessment and use-of-results activities do you feel are redundant?

5. What assessment and use-of-results activities do you feel are unnecessary?

6. What processes have been eliminated as a result of the PAC thus far?

7. What impact has the PAC had on collaboration, integration of efforts, and communication?

Probes: As Necessary

Follow Up Questions: As Necessary

Addendum: None.

Cycle Two

Research Question

CII – RQ1: How have the roles and responsibilities of academic administrators changed

in the moved towards an integrated use-of-results assessment model?

CII – RQ2: What impact has the PAC had on the closing-the-loop process?

Interview Protocols:

(Note: It is the researcher's intent to interview the Professional Assessment Community [PAC] as a group for the purposes of this study via a group interview process.)

Introduction: Researcher will state the purpose of the research project, provide some information about the researcher and the current educational program for which this project is a requirement. Research participants will be informed of data usage and asked if audio recording is permissible. All research participants will have already signed informed consent forms.

Lead Questions:
1. The PAC recently conducted its second meeting. Please describe your reactions to the meeting and discussions we engaged in.

Main Questions:
2. What are the responsibilities of academic administrations with respect to the use of assessment results?

3. Who, within each school, are responsible for this use?

4. Who outside of the schools have a role in assessment and the use of results? What roles do they play?

5. What impact has the PAC had on the responsibilities around assessment and use-of-results at Mountain State University?

6. Please describe any changes in the closing-the-loop process you have observed through your interaction with PAC.

7. What, if any, observations around closing-the-loop efforts have you observed outside the PAC's meetings?

8. Do you, and please explain why, feel that Mountain State University's use-of-results efforts are more or less integrated now than when the PAC began?

Probes: As Necessary

Follow Up Questions: As Necessary

Addendum: None.

Cycle Three

Research Question

CIII – RQ1: How has the integrated model shaped the University's culture of assessment?

CIII – RQ2: What contributes to the sustainability of the integrated assessment use of results model?

Interview Protocols:

(Note: It is the researcher's intent to interview the Professional Assessment Community [PAC] as a group for the purposes of this study via a group interview process.)

Introduction: Researcher will state the purpose of the research project, provide some information about the researcher and the current educational program for which this project is a requirement. Research participants will be informed of data usage and asked if audio recording is permissible. All research participants will have already signed informed consent forms.

Lead Questions:

1. The PAC recently conducted its third meeting. Please describe your reactions to the meeting and discussions we engaged in.

Main Questions:

2. How would you describe Mountain State University's culture of assessment now, as it relates to what it was when the PAC began?

3. Can you describe any perceived evolution at Mountain State University from silo-based decisions to more integrated efforts, with respect to use-of-assessment-results?

4. To what extent do you feel the PAC has influenced the whole of Academic Affairs around collaboration and communication of use-of-results efforts?

5. What actions do you recommend to preserve and sustain the PAC?

6. What external forces pose a threat to a more integrated approach to use-of-assessment-results?

7. What internal forces pose a threat to this integrated model?

8. Who would you recommend to serve on a more permanent PAC?

9. What logistical structures do you think need to be in place for a PAC to survive, i.e., meetings, communications plans, etc?

Probes: As Necessary

Follow Up Questions: As Necessary

Addendum: None.

Appendix F

Institutional Logics Script

(Note: Adapted from Chapter 2 with references and formatting removed. This will be read to research participants by the researcher.)

The problem that I am attempting to address with this research study rests upon the study of institutional logics. Friedland and Alford defined institutional logics as a set of material practices and symbolic constructions that constitute organizing principles. And Brown expanded and clarified this definition relative to higher education institutions by offering the idea that higher educational institutions organize themselves in response to certain external pressures. One example of this could be seen in how Institutional Research departments are typically organized around responding to state and federal reporting regulations. Often, according to institutional logics, silos manifest naturally in response to these external pressures and further that these silos naturally begin to operate in contradiction to one another and frequently to the detriment of the organization.

Appendix G

Analytical Memos

Analytical Memo I

Following Pre-Cycle – September 14, 2020
J. Harmon

The purpose of this analytical memo is to serve as a reflection of ideas and perceptions observed within each assessment cycle (Elliot, 1991). Analytical memos will be completed at the end of each research cycle and distributed to the Professional Assessment Community (PAC). Analytical memos will be organized into the following categories:

- Emerging ideas / perceptions
- Emerging hypothesis
- Future evidence collection ideas
- Actions decided / actions taken
- Survey data (Pre & Post cycles)
- Outcome of coding (Cycles 1-3)

Pre-Cycle Survey Data

Overview:
This research project began with a Pre-Cycle survey using the Middle States Commission on Higher Education's self-assessment tool for understanding the awareness, across departments, of assessment and closing-the-loop efforts for a Higher Education Institution.
83 participants were invited to complete the survey.
60 completed surveys was my target goal.
48 participants completed the survey with some respondents skipping a question or two.
Response rate is 80%.

Questionnaire Components:
The survey options as presented were:
No plans = No documented evidence that the institution has plans to do this. (Quantitative Score = 1)
No evidence = The institution appears to be aware that it should do this, but there is no documented evidence that this is happening. (Quantitative Score = 2)
A few areas = The institution has documented evidence that this is happening in just a few areas (for example, only in programs with specialized accreditation). (Quantitative Score = 3)
Some areas = The institution has documented evidence—not just assurances—that this is happening in some but not most areas (for example, in a number of academic programs but not yet in general education) (Quantitative Score = 4)

Most areas = The institution has documented evidence—not just assurances—that this is happening in most but not all areas. (Quantitative Score = 5)
Everywhere = The institution has documented evidence—not just assurances—that this is happening everywhere. (Quantitative Score = 6)

Results:
The data collected is as follows:

Table G1

Pre-Survey Responses

#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	1. Institutional leaders demonstrate sustained—not just one-time or periodic—support for promoting an ongoing culture of assessment and for efforts to improve teaching.	2.00	6.00	4.72	1.07	1.14	47
2	2. Clear statements of expected learning outcomes at the institutional, unit, program, and course levels have been developed and have appropriate interrelationships.	2.00	6.00	4.98	0.98	0.96	47
3	3. Those with a vested interest in the learning outcomes of the institution, program, or curriculum are involved in developing,	2.00	6.00	4.98	1.00	1.00	47

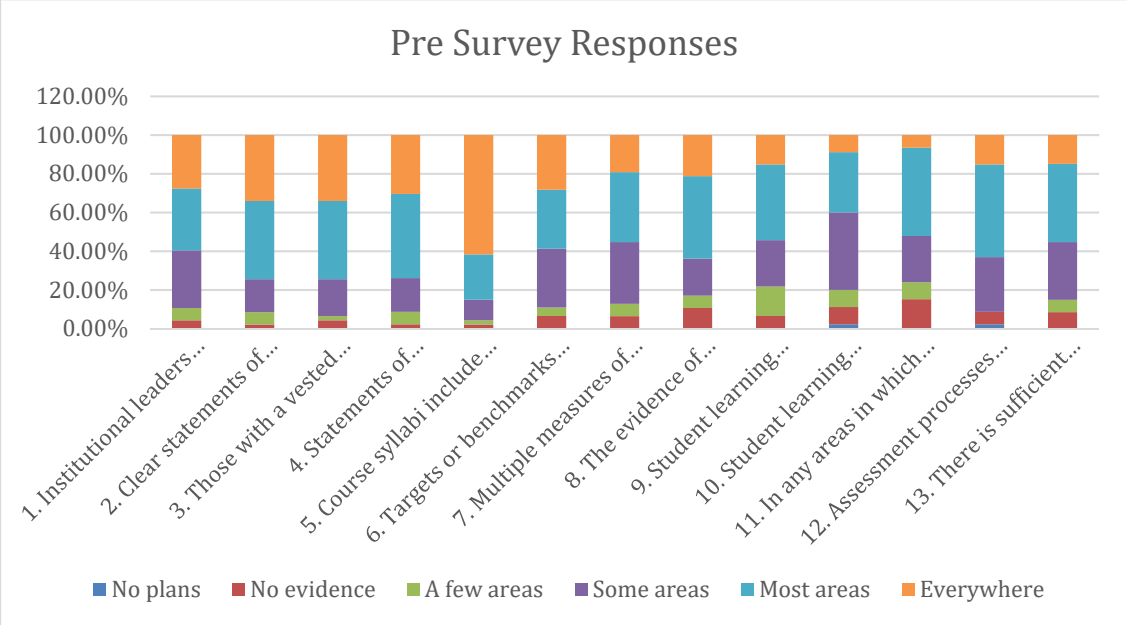
	articulating, and assessing them.						
4	4. Statements of program-level expected learning outcomes are made available to current and prospective students.	2.00	6.00	4.93	0.96	0.93	46
5	5. Course syllabi include statements of expected learning outcomes.	2.00	6.00	5.40	0.91	0.84	47
6	6. Targets or benchmarks for determining whether student learning outcomes have been achieved have been established and justified; the justifications demonstrate that the targets are of appropriate college-level rigor and are appropriate given the institution's mission.	2.00	6.00	4.70	1.12	1.26	46
7	7. Multiple measures of student learning, including direct evidence, have been collected and are of sufficient quality that they can be used with confidence to	2.00	6.00	4.55	1.07	1.14	47

	make appropriate decisions.						
8	8. The evidence of student learning that has been collected is clearly linked to expected learning outcomes.	2.00	6.00	4.57	1.20	1.44	47
9	9. Student learning assessment results have been shared in useful forms and discussed with appropriate constituents, including those who can effect change.	2.00	6.00	4.41	1.11	1.24	46
10	10. Student learning assessment results have been used to improve teaching and by institutional leaders to inform planning and budgeting decisions.	1.00	6.00	4.16	1.13	1.29	45
11	11. In any areas in which the above are not yet happening, concrete, feasible, and timely plans are in place.	2.00	6.00	4.20	1.17	1.37	46
12	12. Assessment processes have been reviewed and changes have been made to improve their effectiveness	1.00	6.00	4.59	1.09	1.20	46

	and/or efficiency, as appropriate.						
13	13. There is sufficient engagement, momentum, and simplicity in current assessment practices to provide assurance that assessment processes will be sustained indefinitely.	2.00	6.00	4.47	1.09	1.19	47

Figure G1

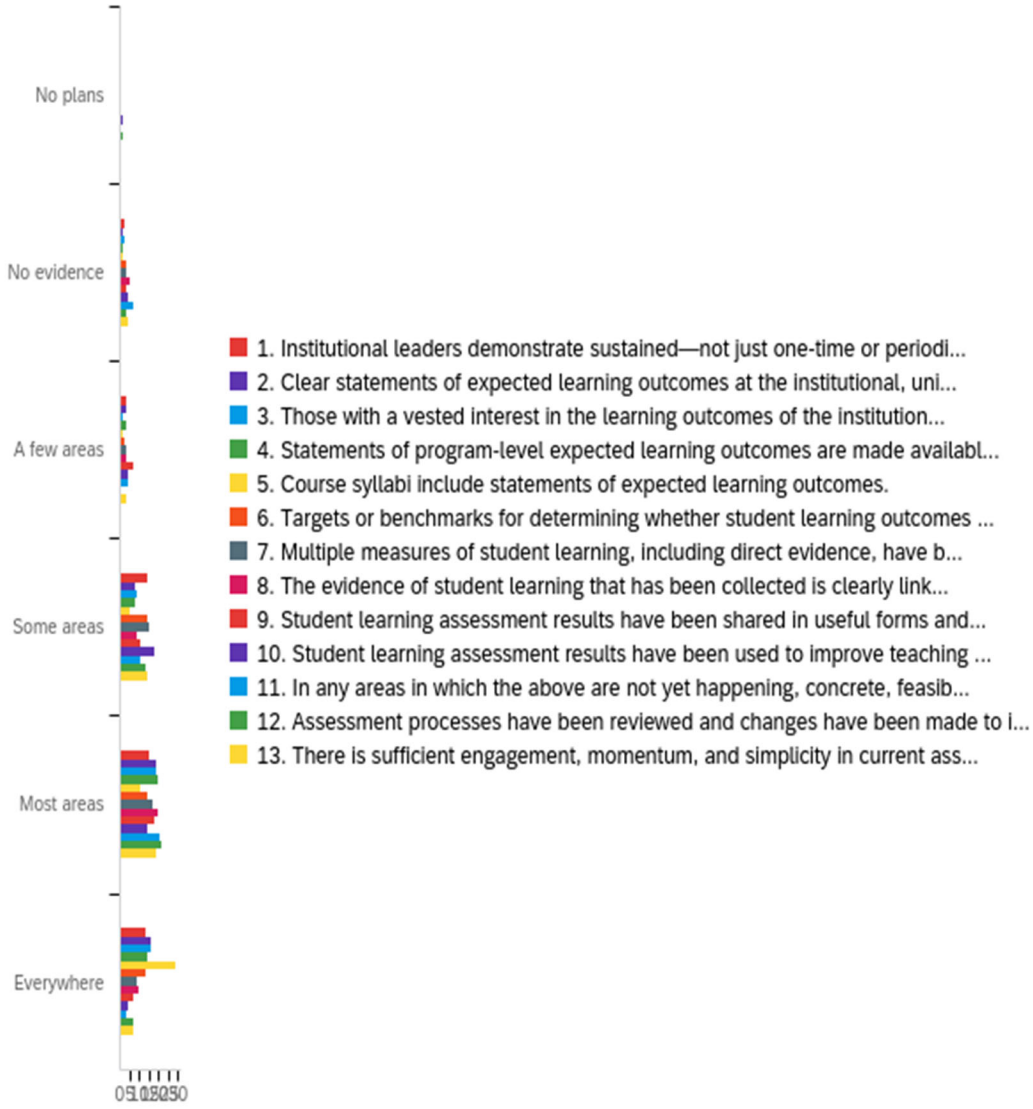
Pre Survey Responses



Question	No plans	No evider	A few are	Some are	Most area	Everywhe
1. Institutional leaders demonstrate sustainedâ€"not just one-time or periodi	0.00%	4.26%	6.38%	29.79%	31.91%	27.66%
2. Clear statements of expected learning outcomes at the institutional, unit, p	0.00%	2.13%	6.38%	17.02%	40.43%	34.04%
3. Those with a vested interest in the learning outcomes of the institution, pr	0.00%	4.26%	2.13%	19.15%	40.43%	34.04%
4. Statements of program-level expected learning outcomes are made availab	0.00%	2.17%	6.52%	17.39%	43.48%	30.43%
5. Course syllabi include statements of expected learning outcomes.	0.00%	2.13%	2.13%	10.64%	23.40%	61.70%
6. Targets or benchmarks for determining whether student learning outcomes	0.00%	6.52%	4.35%	30.43%	30.43%	28.26%
7. Multiple measures of student learning, including direct evidence, have bee	0.00%	6.38%	6.38%	31.91%	36.17%	19.15%
8. The evidence of student learning that has been collected is clearly linked to	0.00%	10.64%	6.38%	19.15%	42.55%	21.28%
9. Student learning assessment results have been shared in useful forms and	0.00%	6.52%	15.22%	23.91%	39.13%	15.22%
10. Student learning assessment results have been used to improve teaching	2.22%	8.89%	8.89%	40.00%	31.11%	8.89%
11. In any areas in which the above are not yet happening, concrete, feasible,	0.00%	15.22%	8.70%	23.91%	45.65%	6.52%
12. Assessment processes have been reviewed and changes have been made	2.17%	6.52%	0.00%	28.26%	47.83%	15.22%
13. There is sufficient engagement, momentum, and simplicity in current asse	0.00%	8.51%	6.38%	29.79%	40.43%	14.89%

Figure G2

Pre Survey Responses



Observations:
These areas scored, on average, the lowest in terms of awareness:

Figure G3

Lowest Scored Criterion

9. Student learning assessment results have been shared in useful forms and discussed with appropriate constituents, including those who can effect change.
10. Student learning assessment results have been used to improve teaching and by institutional leaders to inform planning and budgeting decisions.
11. In any areas in which the above are not yet happening, concrete, feasible, and timely plans are in place.

References:

Elliott, J. (1991). Action Research for Educational Change. Buckingham, Open

University Press.

Analytical Memo II

Following Pre-Cycle – September 14, 2020
J. Harmon

The purpose of this analytical memo is to serve as a reflection of ideas and perceptions observed within each assessment cycle (Elliot, 1991). Analytical memos will be completed at the end of each research cycle and distributed to the Professional Assessment Community (PAC). Analytical memos will be organized into the following categories:

- Emerging ideas / perceptions
- Emerging hypothesis
- Future evidence collection ideas
- Actions decided / actions taken
- Survey data (Pre & Post cycles)
- Outcome of coding (Cycles 1-3)

Pre-Cycle Individual Interviews

Overview:

This research project began with a series of individual interviews conducted by the researcher and the members of the Professional Assessment Community (PAC).
6 participants were invited to participate in the interview process.
6 individuals voluntarily participated.
Response rate is 80% based on my goal however 100% was achieved for this data collection effort.

Questionnaire Components:

The following questions were asked of each participant:

Introduction: Researcher will state the purpose of the research project, provide some information about the researcher and the current educational program for which this project is a requirement. Research participants will be informed of data usage and asked if audio recording is permissible. The informed consent document will be provided to the research participant at this time for signing.

Lead Questions:

1. Please describe your role at Mountain State University.
2. Please tell us how long you have been with Mountain State University.

Main Questions:

3. What is Mountain State University's assessment process?
4. How, if at all, are assessment data used across units?
5. How are assessment data, and use of results efforts, communicated throughout Academic Affairs and the institution as a whole?
6. Within your school, how would you describe the collaborative nature of your school with respect to using assessment data?

7. Please provide an example of your school's use of assessment data and who was involved.
8. Have you seen any examples of collaborative decision-making around the use of assessment results at Mountain State University and if so, can you describe what you saw?
9. Overall, what is your perception of Mountain State University's use of assessment data efforts as they relate to collaboration?

Context: Researcher will provided context relative to institutional logics to each research participant. This will be a read script as seen in Appendix F.

10. What is your understanding of the historical evolution of Mountain State University's assessment and use-of-results efforts to date?
11. What practices does Mountain State University engage in today with respect to the use of assessment results?
12. How does Mountain State University use its assessment data? When and who use assessment data?
    A. (New line of question: Specifically, what do you observe about the Provost, Deans & Their Staff using assessment data, where/how?*
13. What do you see as the value of using assessment data at Mountain State University?

14. Thinking about collaboration and communication, how are decisions stemming from assessment results shared, communicated to the broader division of Academic Affairs and the institution as a whole?
15. What is your perception of Mountain State University Leaderships' support of assessment and assessment data-driven decisions?

*Question 12.A. was not originally part of my research protocol. However, it was a necessary clarification/focus point that I provided in the first individual interview as research participants were mixing up non-academic assessment with academic assessment given the current Middle States reaffirmation project and a new institutional focus on non-academic assessment being driven by the MSCHE standards. This clarification was asked/provided in each subsequent individual interview.

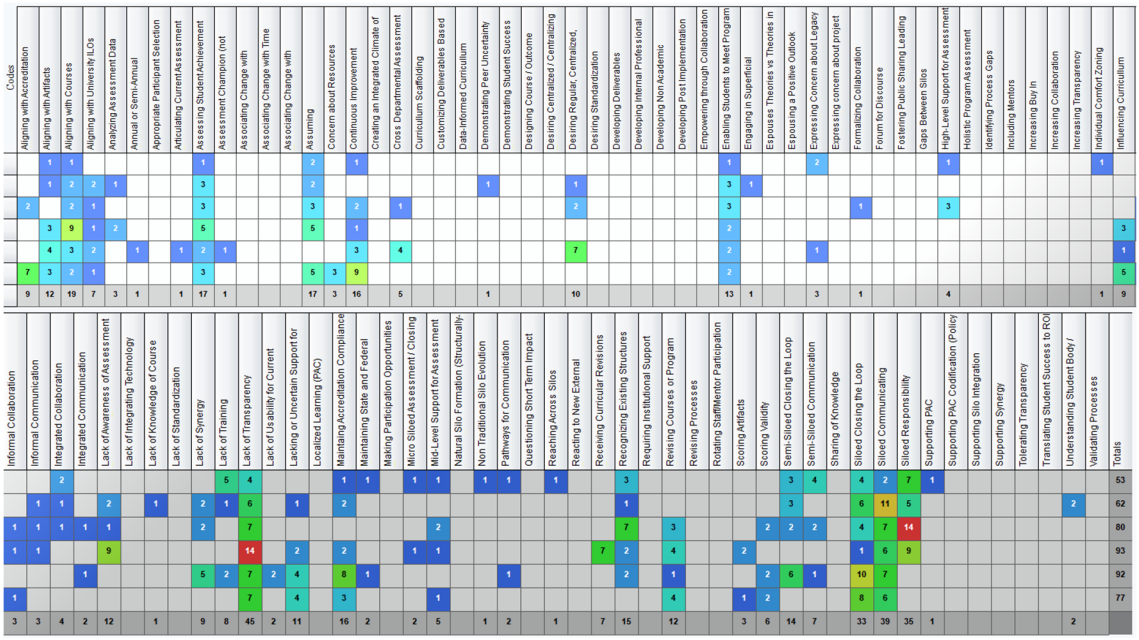
Observations:
The first cycle coding method applied to the individual interview transcripts was Process Coding aka Action Coding in which I have aimed to capture each of your salient points and convert them into actions. Using a qualitative data analysis tool for code application and visualizations, the following visualizations have been produced.
Data Statistics:
6 transcripts coded.
54 codes generated.
457 code applications.

Figure G4

Pre Cycle Packed Code Cloud

Figure G5

Pre Cycle Code Application



References:
Elliott, J. (1991). Action Research for Educational Change. Buckingham, Open

University Press.

Analytical Memo III

Following Cycle I – October 27, 2020
J. Harmon

The purpose of this analytical memo is to serve as a reflection of ideas and perceptions observed within each assessment cycle (Elliot, 1991). Analytical memos will be completed at the end of each research cycle and distributed to the Professional Assessment Community (PAC). Analytical memos will be organized into the following categories:

- Emerging ideas / perceptions
- Emerging hypothesis
- Future evidence collection ideas
- Actions decided / actions taken
- Survey data (Pre & Post cycles)
- Outcome of coding (Cycles 1-3)

Cycle I Group Interview

Overview:

This research project continued with a group interview following five PAC meetings.
6 participants were invited to participate in the interview process.
5 individuals voluntarily participated.
Response rate is 80% based on my goal however 100% was achieved for this data collection effort.

Questionnaire Components:

The following questions were asked of each participant:

Introduction: Researcher will state the purpose of the research project, provide some information about the researcher and the current educational program for which this project is a requirement. Research participants will be informed of data usage and asked if audio recording is permissible. All research participants will have already signed informed consent forms.

Lead Questions:

1. The PAC recently conducted its first meeting. Please describe your reactions to the meeting and discussions we engaged in.

Main Questions:

2. How would you describe the collaboration around Mountain State University's assessment process, specifically with respect to the use-of-results?
3. Do you see Mountain State University's use-of-results collaboration across the schools as having changed and if so how?
4. What assessment and use-of-results activities do you feel are redundant?
5. What assessment and use-of-results activities do you feel are unnecessary?
6. What processes have been eliminated as a result of the PAC thus far?

7. What impact has the PAC had on collaboration, integration of efforts, and communication?

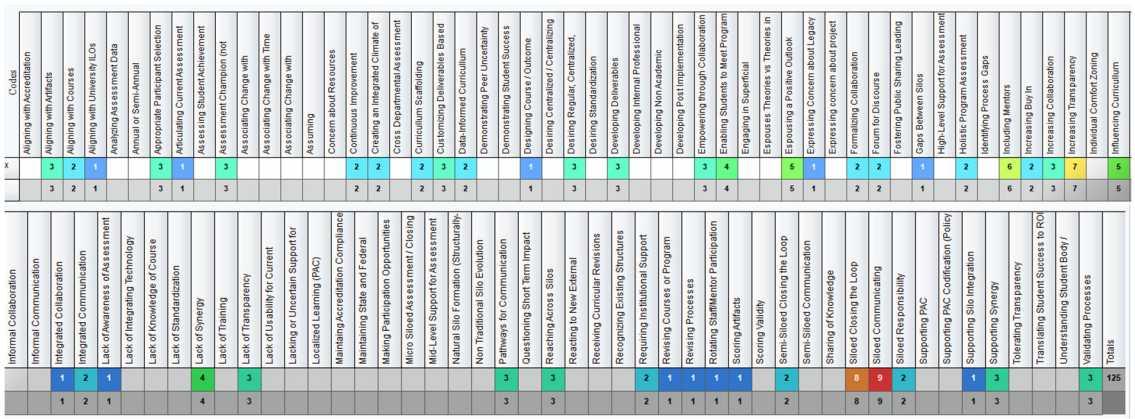
Observations:
The first cycle coding method applied to the individual interview transcripts was Process Coding aka Action Coding in which I have aimed to capture each of your salient points and convert them into actions. Using a qualitative data analysis tool for code application and visualizations, the following visualizations have been produced.
Data Statistics:
1 transcripts coded.
47 codes generated/used.
125 code applications.

Figure G6

Cycle I Packed Code Cloud

Figure G7

Cycle 1 Code Application



References:
Elliott, J. (1991). Action Research for Educational Change. Buckingham, Open

University Press.

Analytical Memo IV

Following Cycle II – December 7, 2020
J. Harmon

The purpose of this analytical memo is to serve as a reflection of ideas and perceptions observed within each assessment cycle (Elliot, 1991). Analytical memos will be completed at the end of each research cycle and distributed to the Professional Assessment Community (PAC). Analytical memos will be organized into the following categories:

- Emerging ideas / perceptions
- Emerging hypothesis
- Future evidence collection ideas
- Actions decided / actions taken
- Survey data (Pre & Post cycles)
- Outcome of coding (Cycles 1-3)

Cycle II Group Interview

Overview:

This research project continued with a group interview following five PAC meetings.
6 participants were invited to participate in the interview process.
5 individuals voluntarily participated.
Response rate is 80% based on my goal however 100% was achieved for this data collection effort.

Questionnaire Components:

The following questions were asked of each participant:

Introduction: Researcher will state the purpose of the research project, provide some information about the researcher and the current educational program for which this project is a requirement. Research participants will be informed of data usage and asked if audio recording is permissible. All research participants will have already signed informed consent forms.

Lead Questions:

1. The PAC recently conducted its second (eighth*) meeting. Please describe your reactions to the meeting and discussions we engaged in.

Main Questions:

2. What are the responsibilities of academic administrations with respect to the use of assessment results?
3. Who, within each school, are responsible for this use?
4. Who outside of the schools have a role in assessment and the use of results? What roles do they play?
5. What impact has the PAC had on the responsibilities around assessment and use-of-results at Mountain State University?

6. Please describe any changes in the closing-the-loop process you have observed through your interaction with PAC.
7. What, if any, observations around closing-the-loop efforts have you observed outside the PAC's meetings?
8. Do you, and please explain why, feel that Mountain State University's use-of-results efforts are more or less integrated now than when the PAC began?

*The number of meetings changed from the initial interview protocol.

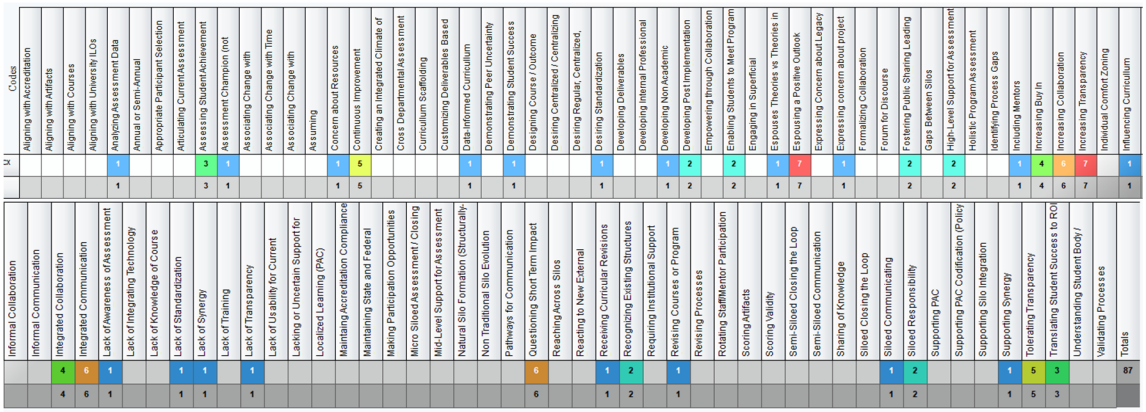
Observations:
The first cycle coding method applied to the individual interview transcripts was Process Coding aka Action Coding in which I have aimed to capture each of your salient points and convert them into actions. Using a qualitative data analysis tool for code application and visualizations, the following visualizations have been produced.
Data Statistics:
1 transcripts coded.
37 codes generated/used.
87 code applications.

Figure G8

Cycle 2 Packed Code Cloud

Figure G9

Cycle 2 Code Application



PAC Action Plan
November 5, 2020
Good Afternoon All,

Attached please find individual files for:

1. FILE #1 - Aqua Cover Sheet, Data Set, Action Plan (TBC)
2. FILE #2 - Aqua Cover Sheet, Action Plan (TBC)
3. FILE #3 – Aqua Cover Sheet, OLO Summary, Action Plan (TBC)

Following this distribution map, would you kindly distribute or plan to distribute accordingly. Once we received the action plan circa 11/27/20 we can do an update. From here on out we'll send full kits following PAC review.

Table G2

PAC Action Plan

Distributor	Venue/Recipient(s)	Document
(OLO) (J. Harmon)	MSU Portal	FILE #1 - Aqua Cover Sheet, Data Set, Action Plan (TBC)

Dean / OLO (J. Harmon)	ProCab	FILE #1 - Aqua Cover Sheet, Data Set, Action Plan (TBC)
Dean / OLO (J. Harmon)	ALT	FILE #2 - Aqua Cover Sheet, Action Plan (TBC)
OLO (J. Harmon)	Admissions / Recruitment	FILE #3 – Aqua Cover Sheet, OLO Summary, Action Plan (TBC)
OLO (J. Harmon)	Advising / Student Success	FILE #3 – Aqua Cover Sheet, OLO Summary, Action Plan (TBC)
PAC	Assistant / Associate Dean Meeting	FILE #1 - Aqua Cover Sheet, Data Set, Action Plan (TBC)
PAC	Quarterly Assessment Development Team Meetings Quarterly Instructional Designer Team Meetings	FILE #1 - Aqua Cover Sheet, Data Set, Action Plan (TBC)
PAC	SME meeting in response to assessment driven curriculum change. The School needs to include the data set when requesting curriculum revision. NOTE: ask Rick what is the appropriate method for the schools to use in requesting course changes.	FILE #3 – Aqua Cover Sheet, OLO Summary, Action Plan (TBC)

References:
Elliott, J. (1991). Action Research for Educational Change. Buckingham, Open

University Press.

Analytical Memo V

Following Cycle III – December 28, 2020
J. Harmon

The purpose of this analytical memo is to serve as a reflection of ideas and perceptions observed within each assessment cycle (Elliot, 1991). Analytical memos will be completed at the end of each research cycle and distributed to the Professional Assessment Community (PAC). Analytical memos will be organized into the following categories:

- Emerging ideas / perceptions
- Emerging hypothesis
- Future evidence collection ideas
- Actions decided / actions taken
- Survey data (Pre & Post cycles)
- Outcome of coding (Cycles 1-3)

Cycle III Group Interview

Overview:

This research project continued with a group interview following five PAC meetings.
6 participants were invited to participate in the interview process.
5 individuals voluntarily participated.
Response rate is 80% based on my goal however 100% was achieved for this data collection effort.

Questionnaire Components:

The following questions were asked of each participant:

Introduction: Researcher will state the purpose of the research project, provide some information about the researcher and the current educational program for which this project is a requirement. Research participants will be informed of data usage and asked if audio recording is permissible. All research participants will have already signed informed consent forms.

Lead Questions:

1. The PAC recently conducted its third meeting. Please describe your reactions to the meeting and discussions we engaged in.

Main Questions:

2. How would you describe Mountain State University's culture of assessment now, as it relates to what it was when the PAC began?
3. Can you describe any perceived evolution at Mountain State University from silo-based decisions to more integrated efforts, with respect to use-of-assessment-results?
4. To what extent do you feel the PAC has influenced the whole of Academic Affairs around collaboration and communication of use-of-results efforts?
5. What actions do you recommend to preserve and sustain the PAC?

6. What external forces pose a threat to a more integrated approach to use-of-assessment-results?
7. What internal forces pose a threat to this integrated model?
8. Who would you recommend to serve on a more permanent PAC?
9. What logistical structures do you think need to be in place for a PAC to survive, i.e., meetings, communications plans, etc?

Observations:
The first cycle coding method applied to the individual interview transcripts was Process Coding aka Action Coding in which I have aimed to capture each of your salient points and convert them into actions. Using a qualitative data analysis tool for code application and visualizations, the following visualizations have been produced.
Data Statistics:
1 transcripts coded.
40 codes generated/used.
94 code applications.

Figure G10

Cycle 3 Packed Code Cloud

Figure G11

Cycle 3 Code Application

References:
Elliott, J. (1991). Action Research for Educational Change. Buckingham, Open

University Press.

Analytical Memo VI

Following Cycle III – December 28, 2020
J. Harmon

The purpose of this analytical memo is to serve as a reflection of ideas and perceptions observed within each assessment cycle (Elliot, 1991). Analytical memos will be completed at the end of each research cycle and distributed to the Professional Assessment Community (PAC). Analytical memos will be organized into the following categories:

- Emerging ideas / perceptions
- Emerging hypothesis
- Future evidence collection ideas
- Actions decided / actions taken
- Survey data (Pre & Post cycles)
- Outcome of coding (Cycles 1-3)

Post-Cycle Survey Data

Overview:
This research project concluded with a Post-Cycle survey using the Middle States Commission on Higher Education's self-assessment tool for understanding the awareness, across departments, of assessment and closing-the-loop efforts for a Higher Education Institution.
80 participants were invited to complete the survey.
57 completed surveys was my target goal.
43 participants completed the survey with some respondents skipping a question or two.
Response rate is 72%.

Questionnaire Components:
The survey options as presented were:
No plans = No documented evidence that the institution has plans to do this. (Quantitative Score = 1)
No evidence = The institution appears to be aware that it should do this, but there is no documented evidence that this is happening. (Quantitative Score = 2)
A few areas = The institution has documented evidence that this is happening in just a few areas (for example, only in programs with specialized accreditation). (Quantitative Score = 3)
Some areas = The institution has documented evidence—not just assurances—that this is happening in some but not most areas (for example, in a number of academic programs but not yet in general education) (Quantitative Score = 4)
Most areas = The institution has documented evidence—not just assurances—that this is happening in most but not all areas. (Quantitative Score = 5)
Everywhere = The institution has documented evidence—not just assurances—that this is happening everywhere. (Quantitative Score = 6)

Results:
The data collected is as follows:

Table G3

Post Survey Responses

#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	1. Institutional leaders demonstrate sustainedâ€”not just one-time or periodicâ€”support for promoting an ongoing culture of assessment and for efforts to improve teaching.	2	6	4.63	0.96	0.92	32
2	2. Clear statements of expected learning outcomes at the institutional, unit, program, and course levels have been developed and have appropriate interrelationships.	3	6	4.81	0.77	0.59	32
3	3. Those with a vested interest in the learning outcomes of the institution, program, or	2	6	4.75	0.97	0.94	32

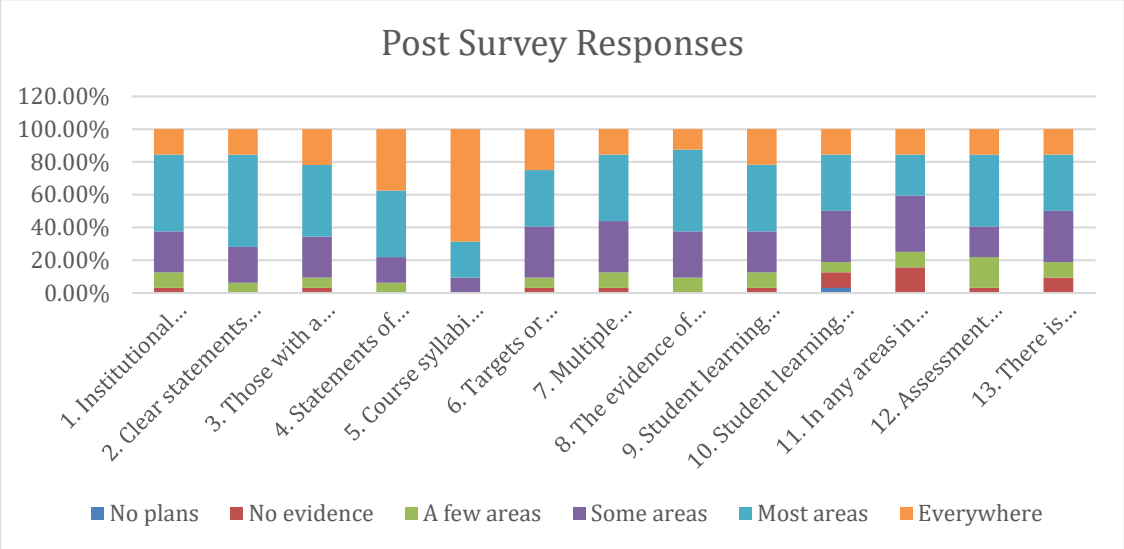
	curriculum are involved in developing, articulating, and assessing them.						
4	4. Statements of program-level expected learning outcomes are made available to current and prospective students.	3	6	5.09	0.88	0.77	32
5	5. Course syllabi include statements of expected learning outcomes.	4	6	5.59	0.65	0.43	32
6	6. Targets or benchmarks for determining whether student learning outcomes have been achieved have been established and justified; the justifications demonstrate that the targets are of appropriate college-level rigor and are appropriate given the institutionâ€™s mission.	2	6	4.72	1.01	1.01	32
7	7. Multiple measures of student learning,	2	6	4.56	0.97	0.93	32

	including direct evidence, have been collected and are of sufficient quality that they can be used with confidence to make appropriate decisions.						
8	8. The evidence of student learning that has been collected is clearly linked to expected learning outcomes.	3	6	4.66	0.81	0.66	32
9	9. Student learning assessment results have been shared in useful forms and discussed with appropriate constituents, including those who can effect change.	2	6	4.69	1.01	1.03	32
10	10. Student learning assessment results have been used to improve teaching and by institutional leaders to inform planning and budgeting decisions.	1	6	4.31	1.26	1.59	32

11	11. In any areas in which the above are not yet happening, concrete, feasible, and timely plans are in place.	2	6	4.16	1.25	1.57	32
12	12. Assessment processes have been reviewed and changes have been made to improve their effectiveness and/or efficiency, as appropriate.	2	6	4.5	1.06	1.13	32
13	13. There is sufficient engagement, momentum, and simplicity in current assessment practices to provide assurance that assessment processes will be sustained indefinitely.	2	6	4.38	1.14	1.3	32

Figure G12

Post Survey Responses



Question	No plans	No evider	A few are	Some area	Most area	Everywhe
1. Institutional leaders demonstrate sustainedâ€"not just one-time or periodicâ€"support for promoting an ongo	0.00%	3.13%	9.38%	25.00%	46.88%	15.63%
2. Clear statements of expected learning outcomes at the institutional, unit, program, and course levels have be	0.00%	0.00%	6.25%	21.88%	56.25%	15.63%
3. Those with a vested interest in the learning outcomes of the institution, program, or curriculum are involved i	0.00%	3.13%	6.25%	25.00%	43.75%	21.88%
4. Statements of program-level expected learning outcomes are made available to current and prospective stud	0.00%	0.00%	6.25%	15.63%	40.63%	37.50%
5. Course syllabi include statements of expected learning outcomes.	0.00%	0.00%	0.00%	9.38%	21.88%	68.75%
6. Targets or benchmarks for determining whether student learning outcomes have been achieved have been es	0.00%	3.13%	6.25%	31.25%	34.38%	25.00%
7. Multiple measures of student learning, including direct evidence, have been collected and are of sufficient qu	0.00%	3.13%	9.38%	31.25%	40.63%	15.63%
8. The evidence of student learning that has been collected is clearly linked to expected learning outcomes.	0.00%	0.00%	9.38%	28.13%	50.00%	12.50%
9. Student learning assessment results have been shared in useful forms and discussed with appropriate constit	0.00%	3.13%	9.38%	25.00%	40.63%	21.88%
10. Student learning assessment results have been used to improve teaching and by institutional leaders to info	3.13%	9.38%	6.25%	31.25%	34.38%	15.63%
11. In any areas in which the above are not yet happening, concrete, feasible, and timely plans are in place.	0.00%	15.63%	9.38%	34.38%	25.00%	15.63%
12. Assessment processes have been reviewed and changes have been made to improve their effectiveness and	0.00%	3.13%	18.75%	18.75%	43.75%	15.63%
13. There is sufficient engagement, momentum, and simplicity in current assessment practices to provide assura	0.00%	9.38%	9.38%	31.25%	34.38%	15.63%

Table G4

Pre Cycle / Post Cycle Survey Data Comparison

MSCHE Rubric Pre / Post Survey Results																		
	Pre	Post	Delta	Pre	Post	Delta	Pre	Post	Delta	Pre	Post	Delta	Pre	Post	Delta	Pre	Post	Delta
Question	No plans			No evidence			A few areas			Some areas			Most areas			Everywhere		
1. Institutional leaders d	0.00%	0.00%	0.00%	4.26%	3.13%	-1.13%	6.38%	9.38%	3.00%	29.79%	25.00%	-4.79%	31.91%	46.88%	14.97%	27.66%	15.63%	-12.03%
2. Clear statements of ex	0.00%	0.00%	0.00%	2.13%	0.00%	-2.13%	6.38%	6.25%	-0.13%	17.02%	21.88%	4.86%	40.43%	56.25%	15.82%	34.04%	15.63%	-18.41%
3. Those with a vested in	0.00%	0.00%	0.00%	4.26%	3.13%	-1.13%	2.13%	6.25%	4.12%	19.15%	25.00%	5.85%	40.43%	43.75%	3.32%	34.04%	21.88%	-12.16%
4. Statements of progran	0.00%	0.00%	0.00%	2.17%	0.00%	-2.17%	6.52%	6.25%	-0.27%	17.39%	15.63%	-1.76%	43.48%	40.63%	-2.85%	30.43%	37.50%	7.07%
5. Course syllabi include	0.00%	0.00%	0.00%	2.13%	0.00%	-2.13%	2.13%	0.00%	-2.13%	10.64%	9.38%	-1.26%	23.40%	21.88%	-1.52%	61.70%	68.75%	7.05%
6. Targets or benchmarks	0.00%	0.00%	0.00%	6.52%	3.13%	-3.39%	4.35%	6.25%	1.90%	30.43%	31.25%	0.82%	30.43%	34.38%	3.95%	28.26%	25.00%	-3.26%
7. Multiple measures of	0.00%	0.00%	0.00%	6.38%	3.13%	-3.25%	6.38%	9.38%	3.00%	31.91%	31.25%	-0.66%	36.17%	40.63%	4.46%	19.15%	15.63%	-3.52%
8. The evidence of stude	0.00%	0.00%	0.00%	10.64%	0.00%	-10.64%	6.38%	9.38%	3.00%	19.15%	28.13%	8.98%	42.55%	50.00%	7.45%	21.28%	12.50%	-8.78%
9. Student learning asse	0.00%	0.00%	0.00%	6.52%	3.13%	-3.39%	15.22%	9.38%	-5.84%	23.91%	25.00%	1.09%	39.13%	40.63%	1.50%	15.22%	21.88%	6.66%
10. Student learning ass	2.22%	3.13%	0.91%	8.89%	9.38%	0.49%	8.89%	6.25%	-2.64%	40.00%	31.25%	-8.75%	31.11%	34.38%	3.27%	8.89%	15.63%	6.74%
11. In any areas in which	0.00%	0.00%	0.00%	15.22%	15.63%	0.41%	8.70%	9.38%	0.68%	23.91%	34.38%	10.47%	45.65%	25.00%	-20.65%	6.52%	15.63%	9.11%
12. Assessment processe	2.17%	0.00%	-2.17%	6.52%	3.13%	-3.39%	0.00%	18.75%	18.75%	28.26%	18.75%	-9.51%	47.83%	43.75%	-4.08%	15.22%	15.63%	0.41%
13. There is sufficient er	0.00%	0.00%	0.00%	8.51%	9.38%	0.87%	6.38%	9.38%	3.00%	29.79%	31.25%	1.46%	40.43%	34.38%	-6.05%	14.89%	15.63%	0.74%
Summary Delta			-1.26%			-30.98%			26.44%			6.80%			19.59%			-20.38%

References:
Elliott, J. (1991). Action Research for Educational Change. Buckingham, Open

University Press.

Appendix H

Office of Learning Outcomes Reports

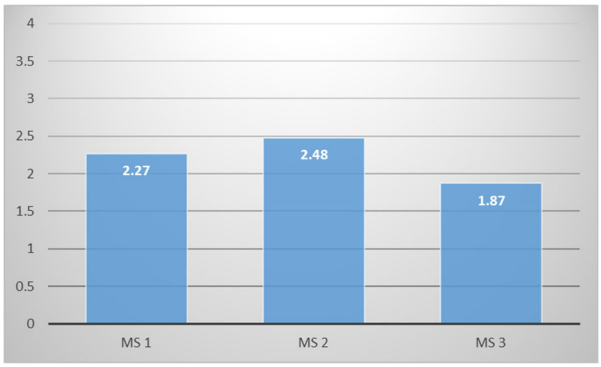
Aqua Assessment Report

PROGRAM OUTCOMES

1. **Demonstrate mastery of the knowledge, techniques, skills, modem tools, and advanced technologies of the appropriate discipline.**
2. **Initiate, design and conduct research.**
3. **Integrate theoretical concepts and research findings into product and/or process innovation.**
4. Incorporate productivity measurement and project planning tools to plan, manage, and evaluate constant improvement projects that support organizational goals.
5. Demonstrate leadership in the workplace through the use of advanced technological and management tools and techniques.
6. Evaluate the impact of technology on the environment, health and safety.

Assessment Schedule			
Outcome	*FY19*	*FY20*	*FY21*
1	x		
2	x		
3	x		
4		x	
5		x	
6		x	

School of Applied Science and Technology / Master of Science in Information Technology



EXECUTIVE SUMMARY

This project covered outcomes #1, #2 and #3 for the MS program.

The project used artifacts from APS-510, APS-600, APS-601, APS-602, APS-700 and MSI-501for the FY 19 academic year. The project used two mentors (Rater I and Rater II) to score all artifacts. Both mentors scored all artifacts for all outcomes. Due to some rater disagreement, a third mentor was added to the project. Scores on the right include all three mentor scores.

Aggregate results are depicted in the table to the right:

STUDENT SAMPLE

This project was a census of all MS students in the designated courses for the designated scholastic year.

APS-602 Managing People in Technology Based Organizations - 8 artifacts
APS-600 Enhancing Performance in Technology Organizations - 14 artifacts
APS-510 Project Management for Technology - 15 artifacts
APS-601 Technology Innovation and Commercialization - 12 artifacts
MSI-501 Foundation of Information Technology* - 2 artifacts
APS-700 Master's Project in Applied Science and Technology - 15 artifacts

66 total artifacts

ARTIFACT SAMPLE

There were four artifacts used in this project which aligned with the criterion developed for each outcome as follows:
APS-510: Final Project (1.1, 1.2, 1.3)
APS-600: Final Project, Deliverable 4: Final Report (1.1, 1.2, 1.3; 3.1, 3.2, 3.3, 3.4, 3.5)
APS-601: Final Paper (1.1, 1.2, 1.3; 3.1, 3.2, 3.3, 3.4, 3.5)
APS-602: Final Project: Fortune Assignment Paper (1.1, 1.2, 1.3)
APS-700: Final Paper (2.1, 2.2, 2.3, 2.4)
MSI-501: Final Assignment (1.1, 1.2,
1.3)

Aqua Assessment Report

Office of Learning Outcomes Summary

Mountain State University continuously assesses the quality of its educational programs through Programmatic Learning Outcomes Assessment. This ongoing effort is carried out through collaboration between the Office of Learning Outcomes (OLO), the Academic Schools, and the Curriculum and Outcomes Assessment Steering Team (COAST).

The Office of Learning Outcomes aims to have assessed all programmatic learning outcomes over a three year cycle. Actions derived from assessment results analyses are implemented through a variety of methods. Assessment reoccurs in the following cycle to determine change efficacy.

Below is a summary of the Aqua Programmatic Learning Outcomes Assessment Report for the:

Master's of Science in Information Technology program offered by the **Mountain School of Arts, Science and Technology.**

The Aqua project results for program learning outcomes 1, 2 and 3 of the Master's of Science in Information Technology program revealed several areas for the Mountain School of Arts, Science and Technology to explore. These include but are not limited to, course content in APS 600, APS, 601, APS 602, APS 700, APS 510 or MSI 501 as well as assessment prompts/instructions in those same courses.

An ongoing effort is to ensure that scoring mentors are properly calibrated.

The Action Plan is due to be developed by the Mountain School of Arts, Science and Technology by November 27th and will be shared thereafter.

School of Applied Science & Technology - MS
Assessment-Driven Action Plan

As a result of assessment-related activities (e.g., AQUA assessment reports, Capstone Reviews, Program Audits, Academic Program Reviews, etc.) School Deans will be asked to complete this *Assessment-Driven Action Plan* one (1) month after the final assessment data is conferred. Action Plans will be tracked by the Office of Learning Outcomes (OLO) and reported annually in the Learning Outcomes Assessment Annual Report in September for the preceding Academic Year.

Type of Assessment: **Aqua Projects**		
Assessment-Driven Suggestion or Recommendation **Date:** 10/27/2020	**School Action Plan** **Date Due:** 10/27/2020	**Person(s) Responsible**
N/A		
N/A		
N/A		
N/A		