Faculty Member Responses to the Implementation of Common Student Learning Outcomes in General Education Courses in Kansas Public Higher Education Institutions

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Submitted to the Graduate Department and Faculty of the School of Education of Baker University in partial fulfillment of the requirements for the degree of Doctor of Education in Educational Leadership

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Date Defended: June 27, 2017

Abstract

In response to a call for quality in higher education (Banta, 2007; Bok, 2006; Roksa & Arum, 2011; U.S. Department of Education, 2006), an emphasis has been placed on learning outcomes and the assessment of student learning (Ewell & Wellman, 2007; Shavelson, 2007; Shulman, 2007). This quantitative cross-sectional descriptive survey research study was designed to provide insight on how faculty members at two and four-year public institutions in Kansas have responded to the implementation of common student learning outcomes in general education courses. Using the implementation of these learning outcomes as an innovation, the Stages of Concern Questionnaire (SoCQ), originally developed by Hall, George, and Rutherford (1979), was adapted and used in this study. Responses from 195 faculty members were used to analyze the variables including stage categories of the SoCQ, the school type, the earliest year of implementation of common student learning outcomes, the importance of assessing student learning outcomes at the respondents' institution, personal awareness of the Kansas Core Outcomes Group project, personal involvement with the Kansas Core Outcome Group project, and the primary method of assessment of student learning at the respondent's institution. Significant interactions between some of the variables associated with this study, primarily with the SoCQ categories of self and impact were found. These two categories represented both ends of the spectrum of the SoCQ analysis. The self stage category represented those respondents who were not concerned or aware of the innovation and the impact stage category represented those who were very informed about the innovation and desire to improve it. Through additional analysis, a clear indication of the high importance of assessment of student learning at Kansas public

higher education institutions was found. However, the reported personal involvement of faculty members with the Kansas Core Outcomes Group process was limited and varied between faculty members at two and four-year institutions. Further analysis should be completed to identify if faculty member perceptions about this innovation in Kansas public higher education institutions change over time. In addition, further analysis should be completed to investigate the impact of the assessment of common student learning outcomes in higher education.

Dedication

I would like to dedicate this work to my son, Quinn. You are my inspiration and the light of my life. I am so proud to be your mom; you are the best!

Acknowledgements

The completion of this dissertation would not have been possible without the love, acceptance, and support from my family. I appreciate your patience during the times that I had to be working instead of with you. Travis, thank you for helping me during this process and taking up the slack at home when I was super busy. Quinn, thank you for always having a smile on your face and a hug ready when I needed one the most. I love you both very much.

I also would like to acknowledge Dr. Tes Mehring. Not only have you been an excellent teacher, you provided the primary guidance and support that allowed me to complete this project. It was not easy, but having your encouragement and support meant everything to me. Dr. Peg Waterman, I can not thank you enough for the endless help from you. Dr. Susan Rogers, thank you so much for providing your expertise to assist with the completion of this work. The last member of my committee is very special to me; Dr. Jackie Vietti, you have been a teacher and a mentor to me inside and outside of the classroom. Thank you for the confidence you have shown in me.

To the best boss in the world, Dr. Brian Inbody, thank you for the constant encouragement and support. You believed in me and provided me with an amazing opportunity for growth and achievement at NCCC. I appreciate you so much.

Finally, I would like to acknowledge all my friends and colleagues in my cohort, especially my partner in crime, Jason Kegler. I am so glad to have had this learning opportunity with you all.

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Chapter One

Introduction

People are questioning whether students are in fact learning. Unfortunately, some authors say the answer is 'no' in higher education and provide evidence to that end (Banta, 2007; Bok, 2006; Roksa & Arum, 2011; U.S. Department of Education, 2006). After years of research in education on how people learn (Biggs, 1987, 1999; Bloom, Englehart, Furst, Hill, & Krathwohl, 1956; Bruner, 1966; Marton, 1976; Piaget, 1950; Ramsden, 1988), educators now rely on the use of assessment of student learning outcomes to help students achieve success in their education.

Background

Higher education has recently been placed under great scrutiny regarding student learning. Authors have produced data that exemplify the poor achievement of students in higher education institutions in this nation (Banta, 2007; Bok, 2006; U.S. Department of Education, 2006). According to Roksa and Arum (2011), 45% of students "show no statistically significant gains in learning over the first two years of college" (p. 35). In response to this scrutiny, emphasis has been placed on learning outcomes and the assessment of student learning. Colleges and universities have been presented with new criteria for assessment from the Higher Learning Commission (HLC). For example, accreditation criterion 4B stated, "The institution demonstrates a commitment to educational achievement and improvement through ongoing assessment of student learning" (HLC, 2012, p. 7). The core component 4B is explicit on what is expected:

1. The institution has clearly stated goals for student learning and effective processes for assessment of student learning and achievement of learning goals.

2. The institution assesses achievement of the learning outcomes that it claims for its curricular and co-curricular programs.

3. The institution uses the information gained from assessment to improve student learning.

4. The institution's processes and methodologies to assess student learning reflect good practice, including the substantial participation of faculty and other instructional staff members. (HLC, 2012, p. 7)

Learning outcomes have also been highlighted in policy from the Kansas Board of Regents (KBOR). With a goal to provide a seamless education system, KBOR (2012) established a Transfer and Articulation Policy that provided for a Transfer and Articulation Council (TAAC) whose mission was to "create structures and processes that facilitate student transfer and degree completion within Kansas higher education" (p. 1). One of the charges of the TAAC was to "create an effective, faculty-led structure for discipline level course articulations based on learning outcomes [and to] use learning outcomes to determine course equivalency" (KBOR, 2012, p. 1).

Student learning outcomes have evolved over time from what were once known as behavioral objectives (Bloom et al., 1956; Gallagher & Smith, 1989; Mager, 1975; Popham, 1971). Development and assessment of learning outcomes in higher education are often left to faculty members at the institution in the given discipline. Required qualifications for higher education faculty depend on the level of instruction. A master's degree in the discipline or subfield is required to teach undergraduate coursework, and a doctorate in the discipline or subfield is required for masters or doctoral programs (HLC, 2016). Therefore, the formal training required for higher education faculty members does

not typically include courses in pedagogy, curriculum development, or assessment of student learning, except in the discipline of education. New higher education faculty members are not always specifically educated on how students learn, nor are they always educated on how to develop or assess student learning outcomes, unless they continue their education through professional development. In response to the charge from KBOR, the TAAC was tasked with approving common student learning outcomes for general education courses with the intent that this commonality will assist with a seamless transfer of credit from one Kansas institution to another. The outcomes were generated by faculty groups from each discipline who attended annual Kansas Core Outcomes Group (KCOG) meetings (KBOR, 2012). During these meetings, formal processes were required, such as a voting process on the developed outcomes and the recording of meeting minutes (KBOR, 2012). The meetings have occurred each year since 2010 (KBOR, n.d.-a). Due to the implementation of the Transfer and Articulation policy, 56 courses have been approved as having direct course equivalency among the public postsecondary education institutions offering the courses in Kansas between 2012 and 2015 and additional courses will be reviewed in the future (KBOR, n.d.-b). TAAC selected courses to be involved in the KCOG process initially based on criteria including facilitation of timely degree completion through the course meeting general education requirements, the number of institutions with the course, and the frequency of transfer across institutions. TAAC also established a 5-year cycle to review these courses (KBOR, 2012). Table 1 provides a listing of the general education courses approved between 2012 and 2015.

Table 1

Courses Approved for Guaranteed Transfer Between 2012 and 2015.

2012	2013	2014	2015
American Government	Acting I	Acting II	Descriptive Astronomy
Chemistry I & Lab	Anatomy & Physiology	Art History I	French II
College Algebra	Art Appreciation	Art History II	International Relations
Composition I	Calculus I	Chemistry II & Lab for Majors	Interpersonal Communication
Composition II	Ethics	Childhood Growth & Development	Intro to Drawing
General Biology & Lab	Developmental Psychology	Elementary Statistics	Nutrition
Intro to Literature	Intro to Computers & Applications	French I	Spanish III
Intro to Psychology	Intro to Cultural Anthropology	Intro to Linguistic Anthropology	Trigonometry
Intro to Sociology	Intro to Philosophy	Logic and Critical Thinking	World History 1500 to Present
Microeconomics	Intro to Political Science	Music Theory I	World Religions
Macroeconomics	Music Appreciation	Social Problems	
Physical Science I & Lab	Physics II & Lab	Spanish II	
Physics I & Lab	Spanish I	Stagecraft	
Public Speaking	Theatre Appreciation	Theatre Practicum	
US History to 1877	World History to 1500		
US History since 1877			
World Regional Geography			

Note. Adapted from *Transfer & Articulation*, by KBOR, (n.d.-a). Retrieved from http://www.kansasregents.org/academic_affairs/transfer_articulation.

Statement of the Problem

KBOR stated on its website, "Each course has core outcomes, which are observable and measurable actions that students will be able to perform upon successful completion of a course" (KBOR, n.d.-a, para. 1). The expectations for assessing student learning are clear from both the accreditation agency and KBOR. However, the strategies and processes each institution implements were left to the institution to design. These core outcomes were developed by discipline specific faculty groups as part of the Kansas Core Outcomes Project (KBOR, 2012).

Care should be taken in the development of these learning outcomes for them to be effective. Fry, Ketteridge, and Marshal (2009) stated:

> The teaching, learning and assessment strategies are issues with which we need to engage in a scholarly manner. It is our role to ensure that the learning outcomes we agree upon are achievable, that we are clear about the levels or standards expected at different stages and that the learning tasks and the assessment of learning are in alignment. If we do not pay due attention to these issues, we may actually encourage surface learning. (p. 48)

Since the faculty responsible for writing the core outcomes for the general education seamless transfer courses may not have had the appropriate training to write effective outcome statements, faculty members may have concerns about the implementation of this widespread change. Faculty members across the state likely vary in their personal background and experience with assessment of student learning, therefore, their response to and assessment of these common student learning outcomes may also vary.

At the time this study was conducted, no research had been completed to evaluate how faculty members in Kansas public higher education institutions view the importance of assessment of student learning outcomes or how aware or involved they have been with the Kansas Core Outcomes Project. No research had focused on determining if there were differences between faculty members at community colleges and universities regarding the Kansas Core Outcomes Project or if the implementation timeframe for courses into the seamless transfer system impacted how faculty members perceived this change. Additionally, no data were available at the time of this study that determined the methodology of the assessment practices of public higher education institution faculty in the state of Kansas. In general, assessment practices are either formative, which happens concurrently with course activities and can help to shape the student learning during the course, or summative, which occurs at the end of a course and reflects student learning after the fact. In some cases, faculty members use a mixed assessment method, which includes both formative and summative assessment practices.

Purpose of the Study

This quantitative cross-sectional descriptive survey research study was designed to provide insight on how faculty members at two- and four-year public institutions in Kansas have responded to the implementation of common student learning outcomes in general education courses. Specifically the school type at which the faculty members teach (public technical college, community college, or four-year university), the general education course(s) taught, the importance of assessment of student learning outcomes at their institution, faculty personal awareness of the Kansas Core Outcomes Group, faculty personal involvement with the Kansas Core Outcomes Group, and the primary method of

assessment of student learning were investigated with regard to faculty members' ratings on the SoCQ.

Significance of the Study

The KBOR, through the TAAC, as part of Foresight 2020 (KBOR, n.d.-c) created a transferability system based on common learning outcomes. The results of this study could provide insight on how faculty members at two- and four-year public institutions in Kansas have responded to this change. In addition to contributing to a body of knowledge related to assessment of student learning, the results of this study may be of interest to the KBOR and the TAAC, Coordinators or Directors of Assessment, faculty members, and Chief Academic Officers at Kansas public higher education institutions. Since the transferability system is dependent on common student learning outcomes and the effectiveness of the KCOG meetings, results may be used by KBOR staff to partially gauge the success of the efforts and time put into the system. Chief Academic Officers and Coordinators or Directors of Assessment at Kansas public higher education institutions may be interested in the resulting data to inform their management and guidance of faculty members in the future related to assessment of student learning. Faculty members in Kansas may find the results of this study to be useful in their self-analysis of the implementation of common learning outcomes. In addition, other states considering a transfer and articulation process may find value in reviewing this study to potentially improve upon the steps taken in Kansas toward this goal.

Delimitations

Delimitations "help further define the parameters of the research study" (Creswell, 2009, p. 113). Two delimitations were identified for this study. The

population for this research was specific to faculty members at two- and four-year public higher education institutions in Kansas who taught any of the general education courses with common student learning outcomes approved through KBOR's seamless transfer system who were teaching during academic year 2016-17. Faculty members teaching general education courses at private institutions in Kansas were not included in this study.

Assumptions

The researcher for this study assumed faculty members at public higher education institutions in Kansas were aware of the common student learning outcomes approved by the KBOR. A second assumption was that all Kansas public higher education institutions had implemented the core outcomes approved through the KBOR/TAAC processes in the recognized general education courses. A third assumption was that faculty at the public higher education institutions in Kansas were assessing core outcomes in some way. A final assumption was that respondents understood the Stages of Concern Questionnaire (SoCQ) and responded truthfully.

Research Questions

Thirteen research questions guided this study:

RQ1. To what extent do faculty members rate their concerns about implementing KBOR approved student learning outcomes as "somewhat true of me now" or "very true of me now" on the Stages of Concern Survey?

RQ2. To what extent are the mean scores of the SoCQ stage categories different among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution?

RQ3. To what extent does school type (public technical college, community college, or four-year university) affect the differences in the mean scores of the SoCQ Stage Categories among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution?

RQ4. To what extent does implementation year of the course into the KCOG system affect the differences in the mean scores of the SoCQ stage categories among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution?

RQ5. To what extent are the mean scores of the SoCQ stage categories different among subgroups of faculty (public technical college, community college, or four-year university) who report low, moderate, or high awareness of the KCOG?

RQ6. To what extent does school type affect the differences in the mean scores of the SoCQ stage categories among subgroups of faculty who report low, moderate, or high awareness of the KCOG?

RQ7. To what extent does implementation year of the course into the KCOG system affect the differences in the mean scores of the SoCQ stage categories among subgroups of faculty who report low, moderate, or high awareness of the KCOG?

RQ8. To what extent are the mean scores of the SoCQ stage categories different among subgroups of faculty who report low, moderate, or high involvement in the KCOG?

RQ9. To what extent does school type affect the differences in the mean scores of the SoCQ stage categories among subgroups of faculty who report low, moderate, or high involvement in the KCOG?

RQ10. To what extent does implementation year of the course into the KCOG system affect the differences in the mean scores of the SoCQ stage categories among subgroups of faculty who report low, moderate, or high involvement in the KCOG?

RQ11. To what extent are the mean scores of the SoCQ stage categories different among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution?

RQ12. To what extent does school type affect the differences in the mean scores of the SoCQ stage categories among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution?

RQ13. To what extent does implementation year of the course into the KCOG system affect the differences in the mean scores of the SoCQ stage categories among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution?

Definition of Terms

The following definitions are included for the reader to help ensure a common understanding of frequently used or specialized terms.

Formative assessment. Formative assessment procedures are those that happen concurrently with course activities and can help to shape the student learning during the course. Formative assessment "provides information to be used as feedback by teachers, and by their students in assessing themselves and each other, to modify the teaching and learning activities in which they are engaged" (Black, Harrison, Lee, Marshal, & Wiliam, 2003, p. 2).

Kansas Core Outcomes Group (KCOG). A group established by the TAAC to facilitate the development of common student learning outcomes in general education courses in Kansas (KBOR, n.d.-a).

Stages of Concern Questionnaire (SoCQ). The survey instrument used in this study designed to help "understand what happens to teachers and college faculty when presented with a change" (George, Hall, & Stiegelbauer, 2006, p. 1).

Student Learning Outcomes Assessment. In this study, student learning outcomes assessment refers to course-level assessment of student achievement associated with the learning outcomes established for the course.

Summative assessment. An assessment practice that occurs at the end of a course and is reflective upon the student learning after the fact or to judge the learning that occurred. Knight (2002) clarified summative assessment as certifying or warranting achievement and suggested it is a performance indicator.

Transfer and Articulation Council (TAAC). A task force established by the KBOR to facilitate the transfer and articulation of credit between public higher education institutions in Kansas (KBOR, n.d.-b).

Organization of the Study

This study is organized into five chapters. This chapter provided an overview and background about common student learning outcomes in Kansas associated with the transfer and articulation process, along with the statement of the problem, purpose, and significance of the study, delimitations and assumptions, research questions, and a listing of defined terms. Chapter two provides a review of the literature relevant to this research including an overview of assessment of student learning, the historical context of

assessment, and implications of accreditation and accountability associated with assessment. Information is also provided regarding faculty perceptions of and involvement with assessment activities. Finally, in chapter two, a review of formative and summative assessment and state involvement in assessment is provided. Chapter three describes the methods of the research study including the research design, selection of participants, measurement, data collection procedures, data analysis and hypothesis testing, and limitations of the study. Presented in chapter four are the results of the data analyses and hypothesis testing. Lastly, in chapter five an interpretation of the results with a summary of the major findings, findings related to the literature, and a conclusion of the study with implications for action and recommendations for further research are included.

Chapter Two

Review of the Literature

The following literature review provides an overview of assessment including the historical context of assessment, along with a review of accreditation and accountability implications associated with assessment. Higher education faculty perceptions and involvement with outcomes assessment are outlined. A review of formative and summative assessment characteristics is summarized. Finally, a review of state-level involvement in assessment in higher education is provided.

Student Learning Outcomes Assessment

The assessment of student learning has been defined and interpreted many ways over time. It can be referenced when discussing an individual student, a cohort of students, one course, a program within a specific discipline, a general education program, and even the assessment of an entire learning institution. As information changes, definitions and uses of the term "assessment" have evolved. For example, Palomba and Banta (1999) defined assessment as "the systematic collection, review, and use of information about educational programs undertaken for the purpose of improving student learning and development" (p. 4). Sixteen years later, Banta, Kinzie, and Palomba (2015) shared an updated definition: "Assessment is the process of providing credible evidence of resources, implementation actions, and outcomes undertaken for the purpose of improving the effectiveness of instruction, programs, and services in higher education" (p. 2). Due to the multiple conceptions of assessment of student learning, it is always important to frame the term appropriately. This study dealt primarily with course level

student learning outcomes assessment (SLOA) in public higher education institutions in Kansas.

At the core of assessment of student learning in a particular course is the learning outcome. Kennedy, Hyland, and Ryan (2009) provided a working definition of learning outcomes as "statements of what a learner is expected to know, understand and/or be able to demonstrate after completion of a process of learning" (p. 5). Learning outcomes are typically constructed by faculty members with responsibility for teaching the course. In higher education, the qualifications to become a faculty member are often related to degree attainment within a specific discipline (HLC, 2016). Specific advanced degrees within a discipline do not include curriculum and instruction development. An advanced degree in education is not often obtained in tandem. Therefore, many of the instructors responsible for creating these outcomes have no background in education or curriculum development. Faculty members are left to educate themselves or rely on professional development provided at their institution to learn the complicated practice of creating effective learning outcomes (Gaff, Pruitt-Logan, Sims, & Denecke, 2003; Robinson & Hope, 2013).

Assessment of student learning outcomes can be approached by institutions in various ways; however, there is often a monetary cost associated with assessment activities. Cooper and Terrell (2013) identified assessment expenditures to include "jobs, tests, software, tools, resources, training, consultants, and conferences" (p. 3). In 2012, over 1,100 job postings were found on Inside Higher Ed that included assessment responsibilities. Institutions were spending around $160,000 annually on assessment activities (Cooper & Terrell, 2013).

Historical Context for Assessment of Student Learning

Shavelson (2007) indicated that the "first third of the 20th century marked the beginning of testing learning in higher education" (p. 28). This indication was prompted by the successful mental testing in World War I in which soldiers were given multiple-choice and true-false questions having one correct answer. "During this period, the emphasis was on the mastery of academic content" (Shavelson, 2007, p. 28). Along with the military, another key stakeholder in the development of standardized testing was the Carnegie Foundation for the Advancement of Teaching (CFAT) whose first president, Henry Pritchett, developed the foundation's vision based on his "concern for the quality of higher education and his recognition of the potential impact that the emergence of 'objective testing' might have on monitoring that quality" (Shavelson, 2007, p. 5).

Shavelson (2007) recognized four eras of assessment of college learning evolved through: (1) the origin of standardized tests of learning: 1900-1933; (2) the assessment of learning for general and graduate education: 1933-47; (3) the rise of test providers: 1948-78; and (4) the era of external accountability: 1979-2007 (time of published work). Between 1900 and 1933, a variety of early tests were developed at the University of Missouri, the Massachusetts Institute of Technology, the University of Cincinnati, and Columbia University (Savage, 1953). These tests focused on content knowledge and were objective, meaning that "students responded by selecting an answer where one answer was correct" (Shavelson, 2007, p. 6). Also during this first era, the Pennsylvania Study was conducted. This study occurred between 1928 and 1932. In this study, Pennsylvania college seniors took a twelve-hour exam that included multiple-choice, matching, and true-false questions. Shavelson (2007) identified this study as noteworthy

because it provided a conception of what was meant by undergraduate achievement and learning as focused comprehensively at the knowledge level, employed technology for assessing learning and achievement, and collected data in designs that provided evidence of both achievement and learning.

The development of the Graduate Record Examination (GRE) occurred during Shavelson's second era. In addition, this era saw the focus shift to the "whole student," measuring not only cognitive outcomes but also the "personal, social, and moral outcomes of general education" (Shavelson, 2007, p. 7). Over time the GRE evolved into a collection of content specific tests and a general education section was added.

In the third era, a number of tests and a few testing companies were created. In 1948, the Education Testing Service (ETS) was created, and in 1959, the American College Testing (ACT) program was created. During these years, tests shifted between multiple-choice tests and constructed-response tests that evaluated "real-world" tasks and moved away from content-based knowledge. These test scenarios created time and cost limitations specifically with regard to finding and training test scorers (Shavelson, 2007).

Lastly, according to Shavelson (2007), the era at the time of his work was titled the era of accountability. Shavelson described the continued evolution of assessment of collegiate learning with the ETS provided Measure of Academic Proficiency and Progress (MAPP), the ACT provided the College Assessment of Academic Proficiency (CAAP), and the College Basic Academic Subjects Examination (CBASE) provided by the University of Missouri. These assessments were in a multiple-choice response format. He then referred to yet another shift from multiple choice style exams to the

Collegiate Learning Assessment (CLA) that includes real-world performance tasks with analysis of complex material and a written response.

In 1983, the National Commission on Excellence in Education recommended widespread reform of our educational system, based on their findings in *A Nation at Risk: The Imperative for Educational Reform*. This report focused heavily on secondary education but had specific recommendations associated with higher education, mostly regarding admission requirements. Since then, there has been consistent pressure put on our educational systems to provide an accounting of student learning in higher education and provide return on investment (ROI) information to all stakeholders (Ewell & Wellman, 2007; Shavelson, 2007; Shulman, 2007; Spellings, 2006). This attention directed a focus on the assessment of student learning within the broader scope of higher education.

During the latter half of the nineties, the National Postsecondary Education Cooperative (NPEC) sponsored reports from two working groups on the topic of student outcomes. One report took the perspective of data. In the data perspective report, Gray and Grace (1997) suggested student outcomes data has the potential to respond to current concerns that the "nation's workforce lacks the skills needed to maintain our nation's economic competitiveness" (p. 2) and raised concerns about the "effectiveness and efficiency of the sector" (p. 2). On the surface, these comments seemed to portray an optimistic viewpoint. However, in the same report, Gray and Grace (1997) indicated that "disagreement among educators and policymakers about the purposes and goals of higher education further stymie assessment efforts" (p. 3).

Nettles, Cole, and Sharp (1997) authored a report from the National Center for Postsecondary Improvement (NCPI) that was meant to identify progress made "by the 50 states and six regional accrediting associations during the past decade toward establishing and implementing higher education assessment policies" (p. 7). This report was meant to present "policies and practices that seek to improve teaching and learning" and to expose "priorities that state policymakers and regional accrediting associations are giving to teaching and learning" (p. 7). These authors indicated that while there was work being done, it was disorganized and inconsistent throughout the nation.

The pressure placed on higher education to respond to questions about the quality of the education system was at its peak during the beginning of the 21st century. Calls for accountability came from the Institute for Higher Education Policy (IHEP), the ETS, and in 2006, a pivotal report, *A Test of Leadership: Charting the Future of U.S. Higher Education* was released by the U.S. Department of Education Secretary, Margaret Spellings (Dwyer, Millet, & Payne, 2006; Erisman & Gao, 2006; Spellings, 2006). Authors of the Spellings Commission report called for accountability and transparency in higher education and recommended that it become a performance-based system where student learning outcomes were measured and reported to stakeholders. Prior to the release of the Spellings Commission report, the American Association of State Colleges and Universities produced an article on value-added assessment that "allows true comparisons of the difference college makes to students across institutions and institutional types, instead of simply reflecting institutional resources and/or reputation" (p. 3). These reports caused concern about the use of standard testing mechanisms to compare institutions with varied missions. Banta and Pike (2007) revisited a concept

originally produced by Warren (1984) to respond to the promotion of the value-added approach in assessment. Warren (1984) suggested, "value added isn't a workable concept and we have to get on with alternative ways of looking at the effect of what we do" (p. 12).

The debate among higher education stakeholders regarding standards in student learning outcomes continued. Daniel, Kanwar, and Uvalic-Trumbic (2009) suggested interest in student learning outcomes standards was intensified in the United States "because the federal government, which is particularly interested in them, authorizes but does not run the accreditation system" (p. 33). There was much pressure placed on accreditation as an external driver of assessment. "All regional accrediting agencies now require institutions to define learning goals and assess student learning, share these data with relevant stakeholders, and use their findings as part of a continuous-improvement process" (Krzykowski & Kinser, 2014, p. 67).

Accreditation, Accountability, and Assessment

Nettles et al. (1997) characterized accreditation as "a voluntary, self-regulating, evaluative process that combines outside peer review and consultation of institutions with internal evaluation and planning" (p. 13). Eaton (2015) defined accreditation as "a process of external quality review created and used by higher education to scrutinize colleges, universities, and programs for quality assurance and quality improvement" (p. 1). Obtaining and maintaining an accredited status in the United States depends on self-study, peer review, site visits, judgment by the accreditation organization, and periodic external reviews. Federal and state governments consider accreditation to be a "reliable authority on academic quality" (Eaton, 2015, p. 1). However, concerns have

been cited regarding the effectiveness of accreditation over time (Daniel et al., 2009; Eaton, 2013; Troutt, 1978).

Troutt (1978) noted criticisms of accreditation regarding the lack of standards that provide assurance of quality in teaching and learning. He continued by stating, "Current accreditation standards illustrate the inadequacy of indirect approaches to assuring quality" (p. 106). Troutt (1978) suggested that standards used for accreditation emphasize inputs such as admissions scores of entering students, how many books are held in the collections of the library, the size of the endowment, and the credentials of the faculty, with a lack of concern regarding outcomes and results. Daniel et al. (2009) indicated a "growing recognition that the current U.S. accreditation system was designed for an institutional model of teaching and learning that no longer exists for most students" (p. 33). Accreditation agencies have responded to these criticisms primarily through revisions of standards.

According to Nettles et al. (1997), between 1984 and 1994 accrediting associations revised and/or adopted standards and criteria designed for assessing educational outcomes. These updates varied from policy statements to specific standard or criteria language changes; however, the concepts were presented in varied formats. For example, the Southern Association of Colleges and Schools in 1984 revised Section III of their criteria on institutional effectiveness while the North Central Association of Colleges and Schools in 1989 produced a statement on the assessment of student academic achievement.

While all accreditation associations have established standards for assessment, they still want to emphasize the individual mission of colleges and universities through

avoiding any common expectations of process. "Without exception, what the associations mandate is documentation of institutionally identified outcomes and analysis of those outcomes, as well as demonstration of action following from the analysis" (Nettles et al., 1997, p. 47). Expectations from accrediting bodies are also broad regarding who at an institution will conduct assessment. Faculty members are listed as responsible for the activity by the Middle States Association, the HLC, the Northwest Association, and the Western Association. The New England Association recognized the responsible parties as individuals and groups responsible for achieving institutional purposes, and the Southern Association identified the president and appropriate constituent groups as being responsible. Between 1997 and 2010, not much had changed regarding accrediting bodies' expectations. Provezis (2010) produced findings including the following:

- All regional accreditors expect learning outcomes to be defined, articulated, assessed, and used to guide institutional improvement.
- None of the regional accreditors prescribe specific assessment practices or tools, but several provide structured guidance with regard to ways to assess student learning.
- All regional accreditors appear to agree that public disclosure of learning outcomes assessment information is an issue of institutional integrity.
- With one exception, regional accreditation standards urge that faculty be involved with learning outcomes assessment, particularly with respect to the creation of learning goals and of plans linking assessment to improvement.

- Perhaps most relevant, each of the regional accreditors reported that deficiencies in student learning outcomes assessment were the most common shortcoming in institutional evaluations. (p. 7)

Nunley, Bers, and Manning (2011) confirmed Provezis' finding for the community college sector by producing findings from both the Southern Association of Colleges and Schools (SACS) and the North Central Association of Colleges and Schools (NCACS). Head and Johnson (2011) reported 70% of community colleges accredited by SACS and undergoing reaffirmation in 2010 were found out of compliance. Nunley et al. (2011) also identified that for the HLC of the NCACS, assessment has been the most frequently cited issue in accreditation and has led to the largest percentage of follow-up reports and visits for community colleges.

Nunley et al. (2011) referenced and reported on a survey of chief academic officers by the National Institute for Learning Outcomes Assessment (NILOA). They suggested the findings from this survey "imply that the assessment agenda in community colleges is more externally driven than it is in the four year sector" (Nunley et al., 2011, p. 8). They cited external factors including board structure, national initiatives such as Achieving the Dream, the Voluntary Framework for Accountability, and Accreditation.

Faculty Perceptions

Faculty member perceptions of student learning outcomes assessment and their involvement in the process are key factors associated with the success of the activity (Banta, 1999; Banta et al., 2015; Nunley et al., 2011; Provezis, 2010). Although the concept of faculty member involvement in assessing student learning is a relative given, there are several identified issues connected to the level of engagement of faculty

members. Provezis (2010) suggested that even though accrediting agencies called for faculty involvement, "all regional accreditation standards are weak in respect to means of assuring such involvement" (p. 13). Bahous and Nabhani (2015) cited reasons based upon faculty interviews why faculty members should be involved in developing and assessing learning outcomes. The reasons included ensuring student learning outcomes are realistic yet challenging, and faculty evaluation of instructional techniques. Other reasons included answering accrediting agencies' demands and serving as an incentive for teachers to stay current.

Research conducted by Dove (2008) recognized several challenges faculty have when implementing student learning outcomes assessment (SLOA) including difficulty quantifying and reporting results, lack of administrative support, and lack of time. Challenges and experiences may lead to negative perceptions of the process of assessment. Through interviews with faculty members in English-medium universities in Arab countries, Bahous and Nabhani (2015) listed several negative perceptions faculty members had regarding assessing learning outcomes including the tendency to focus too heavily on process and documentation while forgetting the whole point of assessment. Also noted was that assessment could be counterproductive, time-consuming, and boring.

Faculty unions may also have a role to play in developing faculty member perceptions regarding the assessment of student learning. An occasional paper from the National Institute for Learning Outcomes Assessment in 2011 reported comments regarding student learning assessment from representatives of major faculty unions, the American Federation of Teachers (AFT), the American Association of University Professors (AAUP), and the National Education Association (NEA). When asked if their

respective organizations had a formal position on assessing student learning outcomes, the AAUP representative indicated there had been no "specific policy statements or institutional recommendations about particular substantive aspects of assessing student learning outcomes and of faculty revising their practices in light of those assessments to enhance such outcomes, because its focus is primarily on process" (Gold, Rhoades, Smith, & Kuh, 2011, p. 7). The representative from AFT referenced a policy statement released April 4, 2011 that focused on the "broader issue of student success in postsecondary education" (p. 8). The document also recognized a general agreement in AFT that college and university "curriculum, teaching, assessment, and accountability all need to focus squarely on student success, [however] there is not a general agreement on what student success actually means" (Gold et al., 2011, p. 8). The representative from the NEA indicated that "faculty should have substantial flexibility in the design, structuring, and teaching of their courses" (Gold et al., 2011, p. 9) and referenced policy resolutions addressing assessment, testing, and student learning. The *2013-2014 NEA Resolutions* document included a section (B-66) regarding assessment of student learning: "The National Education Association supports ongoing comprehensive assessment of student growth. A student's level of performance is best assessed with authentic measures directly linked to the lessons taught and materials used by teachers" (NEA, 2014, p. 43). The resolution indicated a variety of measures should be used to assess student growth and that classroom teachers are the "best qualified to determine criteria for assessment of students and dissemination of results" (NEA, 2013-2014, p. 43).

When asked about factors that are effective in encouraging unionized faculty to become involved in assessment, the NEA representative focused on working together

with the administration and relying on faculty responsibilities, governance, and academic freedom. He indicated it was "important to remember that in most cases faculty do not need to be encouraged to develop methods and systems to improve teaching and learning. It is what they do every day of their work lives" (Gold et al., 2011, p. 12). Both the AAUP representative and the AFT representatives referenced resources and compensation as an effective encouragement. The AAUP representative suggested a push for productivity had "reduced the time and the incentive for faculty to get involved in student learning assessment teams and activities" (Gold et al., 2011, p. 13). He continued with:

> There is too little consideration of the time and energy faculty members may put into assessing student learning and revising curriculum and pedagogy accordingly. In a unionized setting, this sort of work should be contractually identified as part of the basic instructional responsibility of faculty members, counting as much as teaching a class. (Gold et al., 2011, p. 13)

The AFT representative suggested, "First, in order to help students succeed, faculty members need to work under professional conditions: a living wage, adequate benefits, job security, academic freedom, the ability to participate in shared governance, and access to professional development" (Gold et al., 2011, p. 14).

Some faculty may resist assessment of student learning for a variety of reasons. Studies have linked resistance to the assessment of student learning to the lack of a reward/incentive system like those associated with research and publications (Peterson, Dill, & Mets, 1997). Another key problem is the delineation between assessment for accountability and assessment for improvement (Baker, 1999; Cross 1999; Steadman,

1998). If assessment is linked to accountability, faculty are less likely to become involved. Farkas (2013) suggested some faculty may feel their autonomy is threatened or that data collected from their classes and syllabi will be used for negative purposes.

Faculty perceptions of assessment may be dependent on the context in which it is described. Deuben (2015) reported that "when faculty see assessment as a formative process, there is a high level of support and participation" (p. 100), however "faculty respond with fear, frustration, and distrust to the calls for accountability" (p. 98). The results of this qualitative study based on 18 interviews of faculty members at a large, land-grant institution, revealed that assessment from the context of accountability showed a "lack of faith in their work" and that faculty members "do not trust the outside calls for accountability as an adequate way for teaching and learning to be measured" (p. 99).

Faculty Involvement

Palomba, Kinzie, and Banta (2015) suggested effective assessment of student learning cannot occur without faculty involvement. They also recognized that while faculty members may engage in assessment in their classrooms, they may also be asked to collaborate as they develop and carry out plans for assessing courses. There is much research associated with faculty involvement in student learning assessment (Bahous & Nabhani, 2015; Dove, 2008, Farkas, 2013; Praslova, 2013; Strollo, 2011; Williams, 2013).

Williams (2013) identified six faculty-related factors that bring about faculty engagement with assessment. These factors are summarized as "(1) values and beliefs, (2) faculty development, (3) experience with assessment, (4) collaborative processes, (5) peer and/or discipline support, and (6) resources and time" (p. 72). Additionally,

Williams proposed more institution-related factors regarding engagement with assessment, including "(1) embedded assessment, (2) student learning precedes accountability, (3) administrative and leadership support, (4) student involvement, (5) rewards and incentives, and (6) data management and use" (p. 73).

Dove (2008) conducted a qualitative, multiple case study that identified several factors that influenced faculty involvement with student learning outcomes assessment at a community college. First, the time employed as a full-time faculty member influenced faculty adoption of assessment practices. Those faculty members with greater than twenty years of experience were less likely to adopt student learning outcomes assessment than faculty members with fewer than ten years of experience. Explanations provided for the difference included confidence in teaching and the perception that outcomes assessment is an educational trend (Dove, 2008). Research from Stencil (2014) at a Midwest technical college, however, suggested that variables such as length of time working at the college and length of time working in higher education did not show any significant difference in perceptions on assessment.

Another factor listed by Dove (2008) and supported by Lederman (2008) was the discipline in which a faculty member taught. Faculty members in the humanities were more likely to have difficulty with assessment than faculty members in the sciences. In Dove's (2008) study, faculty members in the humanities indicated that what they teach is difficult to measure quantitatively.

Lastly, Dove (2008) suggested that faculty in career programs were more likely to complete student learning outcomes assessment than those in transfer programs. Two explanations were offered. First, as career programs are focused on employment, there

are specific goals that lend themselves to assessment. Second, career program faculty members are more accustomed to accountability as many career programs have external accreditation (Dove, 2008; Gray, 1997).

Praslova (2013) suggested understanding and respecting the local culture and taking advantage of professional development were ways to transition faculty members from "grudging compliance" with assessment activities to "creative ownership" (p. 1). In a mixed method study at a Southeastern community college, Strollo (2011) reported five results associated with the assessment of student learning outcomes initiatives. The first result was there were no significant differences between faculty and administrators in the beliefs held regarding the value of the assessment. Second, the length of time faculty had taught at the institution impacted their beliefs held of assessment. There were significant differences between faculty members who had taught at the institution five years or less and those who had taught for 21 years or more. Third, there were also differences between faculty members teaching in Associate of Science/Associate of Applied Science (AS/AAS) and Associate of Arts (AA) programs. Faculty members in AS/AAS programs believed more strongly that assessment activities informed teaching or made an impact on learning than AA faculty members. Fourth, the primary driver of the assessment effort was faculty members; however, the chief assessment officer was identified as the influential individual. Lastly, additional faculty development was the dominate factor needed to improve assessment on that campus.

Formative and Summative Assessment

Since the higher education community has accepted that assessment of student learning is here to stay (Terenzini, 2010), the next step has been to identify the types of

assessment. Crisp (2012) identified the two most common types of assessment as "formative (designed primarily to improve learning) and summative (designed primarily to judge learning)" (p. 33). Black et al. (2003) described formative assessment more completely:

> An assessment activity can help learning if it provides information to be used as feedback by teachers, and by their students in assessing themselves and each other, to modify the teaching and learning activities in which they are engaged. Such assessment becomes formative assessment when the evidence is used to adapt the teaching work to meet learning needs. (p. 2)

Feedback is a key component of formative assessment. The use of feedback contributes to improved student learning outcomes (Cabrera, Colbeck, & Terenzini, 2001; Kulic & Kulic, 1979; Robles 1999; Schacter & Thum, 2004). Research exists that suggested student learning outcomes can be improved using formative assessment (Black et al., 2003; Gibbs, 2006; Nicol & Macfarlane-Dick, 2006). The effectiveness of formative feedback relies on both the teacher and the student. Students need to use the feedback to identify where they are lacking knowledge or attention and must be willing to take action (Black & Wiliam, 1998; Sadler, 1989). Boud (2000) suggested students with those self-assessment skills are "able to contribute to their own learning and that of others" (p. 152).

Knight (2002) clarified summative assessment as certifying or warranting achievement and suggested it is a performance indicator. "So important are those feedout functions that such assessment is often called high stakes or summative assessment, and great emphasis is consequently put on making it robust" (Knight, 2002, p. 276). A shift

from a focus on teaching to a focus on learning in higher education (Evans, 2010; Terenzini, 2010) has, in turn, caused a transition away from assessment of learning to assessment for learning (Black et al., 2003; Huba & Freed, 2000).

Hernandez (2012) suggested the key difference between formative and summative assessment is based on their purpose and the effect the assessment has on student learning. The varied purposes of assessment can overlap or conflict with each other (Bloxham & Boyd, 2007; Brown, Bull, & Pendlebury, 1997) and in some cases, assessments are designed to be both formative and summative (Heywood, 2000; Knight & Yorke, 2003; Taras, 2005; Yorke, 2007). Hernandez (2012) used the term "learning-oriented assessment" and indicated that using this language provides a "more satisfactory perspective when considering the links between assessment and learning" (p. 491).

State Involvement

In considering state involvement, Ewell (1985) argued for a "growing need for a state role in assessing and improving undergraduate education" (p. 1). He suggested states must develop funding and regulatory policies that encourage institutional level efforts toward self-improvement and monitor the "performance of the state's higher education system as a whole by collecting appropriate measures of effectiveness at periodic intervals" (p. 4). Ewell, Finney, and Lenth (1990) identified four themes associated with state involvement with assessment. First, assessment had advanced to the mainstream of state policy. Second, flexibility and institutional autonomy had persisted. Third, there was clear direction regarding institutional responsibility for financing assessment activities, and finally, improvement rather than accountability was the main theme of assessment.

As an update, Ewell (2009) summarized state involvement since the 1980's as a period of much change. As the primary motivators of assessment in the 1980's, state leaders were eventually persuaded away from standardized testing to let institutions develop specific methods to gather evidence of achievement. Recently, the federal government has promoted the College Scorecard. This scorecard was designed to increase transparency so people making decisions about which college to attend could see the effectiveness of their chosen schools. Metrics that a consumer can review include the percentage of degrees awarded and programs offered, acceptance rates and test scores, demographics of the student body, average cost of attendance, financial aid received and repayment information, and average earnings for completers (U.S. Department of Education, n.d.) The KBOR followed suit with a comparison tool called Degree Stats. It is an online tool that allows consumers to compare the effectiveness of the public colleges in Kansas, costs, and earnings of completers (KBOR, n.d.-d).

By the 1990's external accrediting bodies were engaged with updated standards that in some ways mirrored what states had been doing (Ewell, 2009). At that point, due to budget constraints and a shift toward performance funding, most states stopped enforcing assessment mandates. Nettles et al. (1997) indicated state involvement varied with only about 10 states actively designing and implementing assessment programs. Peterson and Augustine (2000) identified the governing structure of the state showed the most significant differences among institutional approaches to assessment. Institutions were more likely to collect data if their state had planning agencies rather than coordinating advisory boards. The varied status of states did not change, as Zis, Boeke,

and Ewell (2010) indicated states vary in intensity of engagement with assessment activities and requirements.

An important aspect of state-level involvement with assessment is the use of financial incentives and consequences. As of 2015, 32 states had a funding formula or policy based on performance (such as course completion, time to degree, degree attainment), and five states were transitioning to a performance-based funding scheme (National Conference of State Legislatures, 2015). In Kansas, for both two-year and four-year public institutions, any new state funds are allocated through the results of multi-year Performance Agreements that are reported on and evaluated annually. This agreement includes indicators prescribed by the state's strategic agenda, *Foresight 2020,* and institution-specific goals identified by the institution and approved by KBOR (KBOR, 2014). It is important to note that given the status of the Kansas economy since the Performance Agreements have been in place, new funds made available to public higher education institutions in Kansas have been limited to fund specific programs established through legislation rather than supporting credit hour growth.

Summary

In this chapter, a literature review was provided regarding the research topic. Specifically, the chapter included an overview of assessment of student learning, the historical context of assessment, and implications of accreditation and accountability associated with assessment. Information was also provided regarding faculty perceptions of and involvement in assessment activities. Finally, a review of formative and summative assessment and state involvement in assessment was provided. The next chapter contains a review of the methods of this research study including research design,

selection of participants, measurement, data collection procedures, data analysis and hypothesis testing, and limitations.

Chapter Three

Methods

This quantitative cross-sectional descriptive survey research study was designed to provide insight on how faculty members at two- and four-year public institutions in Kansas have responded to the implementation of common student learning outcomes in general education courses. Specifically, the importance of assessment of student learning outcomes, awareness of the Kansas Core Outcomes Group, involvement with the Kansas Core Outcomes Group, assessment methods, and implementation year of core student learning outcomes in two-year and four-year public higher education institutions in Kansas were investigated. This chapter includes information regarding the research design, selection of participants, measurement, data collection procedures, data analysis and hypothesis testing, and limitations.

Research Design

A quantitative cross-sectional descriptive survey research design was used to conduct this study. The dependent variables in this study included the seven stages of concern, summarized as follows in three categories by George et al. (2006):

Self Concerns

Stage 0 - Unconcerned: The individual shows little concern about or involvement with the innovation.

Stage 1 - Informational: The individual shows a general awareness of the innovation; interest is impersonal and focused on general characteristics, effects, requirements for use.

Stage 2 - Personal: The individual is characterized as uncertain; concerns about individual inadequacy, potential conflicts, and personal commitment.

Task Concerns

Stage 3 - Management: The individual has concerns regarding issues of efficiency, organizing, managing, scheduling, and time demands.

Impact Concerns

Stage 4 - Consequence: The individual has concerns about the relevance of the innovation for students, evaluation of student outcomes, and the changes necessary to improve student performance.

Stage 5 - Collaboration: The individual has concerns regarding coordination and cooperation with others in the use of the innovation.

Stage 6 - Refocusing: The individual has a desire to explore universal benefits of the innovation and has definite ideas about alternatives to the proposed or existing form of the innovation.

Differences in the stages categories of concern categories were assessed based on the following variables: (a) the school type (public technical college, community college, or four-year university); (b) general education course(s) taught, which was used to identify the earliest year each instructor taught a course with common student learning outcomes; (c) the importance of assessing student learning outcomes at the respondents' institution (high, moderate, low); (d) personal awareness of the Kansas Core Outcomes Group project (high, moderate, low); (e) personal involvement with the Kansas Core Outcome

Group project (high, moderate, low); and (f) the primary method of assessment of student learning at the respondent's institution (summative, formative, or mixed).

Selection of Participants

General education faculty members at Kansas public universities, community colleges, and technical colleges comprised the population of interest in this study. Kansas public higher education institutions were identified specifically for this study due to the approval of guaranteed transfer courses by the KBOR (n.d.-b). The sample for this study was faculty members involved in teaching one or more of the general education courses, approved between 2012 and 2015, that transfer statewide for full credit under the KBOR System-wide Transfer Program. Table 1 (presented in chapter one) listed the approved KBOR Transfer and Articulation Agreement for the years 2012 through 2015.

To identify the faculty members at Kansas public institutions who were involved in teaching the identified courses, a list was created after an internet survey of the seven universities, nineteen community colleges, and six technical college websites was conducted to find the faculty members involved in teaching any of the courses identified. Specifically, a review of course schedules, personnel listings, and contact lists were reviewed, and lists of faculty members were generated for each institution. During this process, each faculty member's email address was obtained and stored electronically in a spreadsheet.

Measurement

The Stages of Concern Questionnaire (SoCQ) survey instrument (George et al., 2006) used for this research was obtained from the Southwest Educational Development Laboratory (SEDL), owner of the copyright. The researcher paid a fee of $0.50 per

questionnaire to SEDL to use the survey online along with the associated online administrative tools. The questionnaire is generic, meaning it can be used to assess concerns for any number of innovations or changes. For this research, the innovation in the questionnaire was customized to include the words *Kansas Common Core Student Learning Outcomes* as part of the wording for each statement. Permission for the customization was obtained from SEDL (see Appendix A). The SoCQ contains 35 statements that reflect a potential concern about an innovation. The respondent is provided instructions to answer each item by indicating to what extent each statement reflected current perceptions. The scale of responses ranges from 0 = *concern is irrelevant*; 1 = *not true of me now*; 2, 3, and 4 = *somewhat true of me now*; and 5, 6, and 7 = *very true of me now* (Hall, George, & Rutherford, 1977). To analyze the stage categories, the raw data from the survey items that were used to measure the corresponding stage was summed. Five statements on the SoCQ correspond to each of the seven stages of concern. Table 2 provides a listing of survey items and the corresponding stage of concern. George et al. (2006) grouped the seven stages of concern into three categories titled self, task, and impact. The stages of concern "appear to progress from little or no concern, to personal or self concerns, to concerns about the task of adopting the innovation, and finally to concerns about the impact of the innovation" (p. 8). The stages are developmental, meaning that concerns associated with one level must be resolved before later concerns emerge. For this study, the score for the self stage category involved averaging the scores from stages 0, 1, and 2. The task stage category is an average of the stage 3 responses. Lastly, the impact stage category involves averaging the scores from stages 4, 5, and 6.

Table 2

Survey Items and Their Corresponding Stage of Concern

Stage 0	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
Q 3	Q 6	Q 7	Q 4	Q 1	Q 5	Q 2
Q12	Q14	Q13	Q 8	Q11	Q10	Q 9
Q21	Q15	Q17	Q16	Q19	Q18	Q20
Q23	Q26	Q28	Q25	Q24	Q27	Q22
Q30	Q35	Q33	Q34	Q32	Q29	Q31

Note. Adapted from *Measuring implementation in schools: The stages of concern questionnaire*, by A. A. George, G. E. Hall, & S. M. Stiegelbauer, 2006. Austin, TX: Southwest Educational Development Laboratory.

Demographic or subgroup questions were added to the beginning of the survey. These subgroup questions included (a) the school type (public technical college, community college, or four-year university); (b) general education course(s) taught, which was used to identify the earliest year each instructor taught a course with common student learning outcomes; (c) the importance of assessing student learning outcomes at the respondents' institution (high, moderate, low); (d) personal awareness of the Kansas Core Outcomes Group project (high, moderate, low); (e) personal involvement with the Kansas Core Outcome Group project (high, moderate, low); and (f) the primary method of assessment of student learning at the respondent's institution (summative, formative, or mixed). Brief definitions of the three assessment methods were provided on the survey for clarification. A copy of the complete, customized survey can be found in Appendix B.

To identify implementation year, the courses selected by each respondent were reviewed to identify the earliest course implementation year. The survey software

produced raw data that consisted of a single cell in Excel that included a list of the courses selected by an instructor, separated by commas. The text to columns function in Excel was used to separate the courses into multiple columns and for each respondent, the course with the earliest implementation year was identified and the year was recorded.

Validity, as Lunenburg and Irby (2008) explained, is "the degree to which an instrument measures what it purports to measure" (p. 181). One of the main forms of validity is construct validity. "All variables derive from constructs, such as intelligence, achievement, personality, and so forth" (Lunenburg & Irby, 2008, p. 182). Original SoCQ research by Hall, George, & Rutherford (1977) provided validity data associated with the instrument. Using a 195-item questionnaire, intercorrelation matrices and factor analyses were used to validate the SoCQ. The original data did not include stage 0. Researchers were not confident at the time that it could be measured. Therefore Table 3 presents intercorrelations with stage 0 absent.

Table 3

Intercorrelations among 195-Item Stages of Concern Questionnaire Scales

Stages	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
1	.68	.47	.21	.21	.19
2	1.00	.78	.43	.37	.43
3		1.00	.60	.51	.59
4			1.00	.82	.80
5				1.00	.77

Note. Adapted from *Measuring implementation in schools: The stages of concern questionnaire*, by George, A. A., Hall, G. E., & Stiegelbauer, S. M., 2006. Austin, TX: Southwest Educational Development Laboratory.

Later studies revealed this stage could be measured. Presented in Table 4 are the scores in which stage 0 is present.

Table 4

Correlations between Varimax Factor Scores and Scale Scores on the Pilot Stages of Concern Questionnaire – Analysis of 150 Items, 363 Respondents

SoC Scale Scores	Varimax Factor Scores						
	7	1	6	3	4	2	5
0	.83	-.36	.41	.04	.05	-.04	-.09
1	.46	.67	-.40	-.10	.22	-.35	.01
2	-.14	.49	.72	.36	.04	-.14	.26
3	.10	-.04	-.34	.91	.10	.12	-.12
4	-.14	-.19	.00	.12	.96	-.02	-.07
5	.10	.37	.11	-.11	.11	.82	-.34
6	.16	-.05	-.17	-.02	.07	.40	.88

Note. Adapted from *Measuring implementation in schools: The stages of concern questionnaire*, by George, A. A., Hall, G. E., & Stiegelbauer, S. M., 2006. Austin, TX: Southwest Educational Development Laboratory.

The SoCQ changed over time from a 195-item questionnaire to a 35-item questionnaire based on "item-scale score correlations and item content analysis to avoid excessive redundancy" (George, Hall, & Stiegelbauer, 2006, p. 14). Through that period of evolution, the validity was tested several times. In 1976, a validity study was conducted which resulted in data represented in Table 5.

Table 5

Correlation between Peak Stage Estimates and Rank Order of SoCQ Percentile Scores

SoC Scale Scores	Peak Stage of Concern Rating						
	0	1	2	3	4	5	6
0	.27	.34	-.11	.02	-.22	-.22	-.13
1	.15	.47	.47	-.09	-.11	-.50	-.45
2	.03	.38	.42	-.21	-.10	-.24	-.34
3	-.25	-.08	.00	.30	-.04	.02	.09
4	-.05	-.22	-.26	-.01	.13	.08	.33
5	-.20	-.48	-.20	-.03	.31	.54	.15
6	-.20	-.20	.16	-.15	.24	.17	.31

Note. Adapted from *Measuring implementation in schools: The stages of concern questionnaire*, by George, A. A., Hall, G. E., & Stiegelbauer, S. M., 2006. Austin, TX: Southwest Educational Development Laboratory.

Lunenburg and Irby (2008) described reliability as "the degree to which an instrument consistently measures whatever it is measuring" (Lunenburg & Irby, 2008, p. 182). The authors of the original SoCQ assured a high internal reliability through careful selection of items in each stage of the questionnaire. For the original questionnaire, coefficients of internal reliability were calculated with $n = 830$, and test-retest correlations were calculated with $n = 132$ (Hall et al., 1977). The results of these initial reliability tests provide evidence of reliability. All scores are above .50, and some results of the reliability of the scale are above .80. Provided in Table 6 are the reliability data for the SoCQ in 1974.

Table 6

Reliability Data for Original SoCQ

Stage	Alpha	Pearson-*r*
0	.64	.65
1	.78	.86
2	.83	.82
3	.75	.81
4	.76	.76
5	.82	.84
6	.71	.71

Note. Adapted from *Measuring implementation in schools: The stages of concern questionnaire*, by George, A. A., Hall, G. E., & Stiegelbauer, S. M., 2006. Austin, TX: Southwest Educational Development Laboratory.

Since then, the questionnaire has been used in a variety of studies which provided additional reliability data. The reliability of the SoCQ has remained consistent over years of use, which provides additional evidence of the reliability of the questionnaire. A summary of the reliability data from multiple studies is shown in Table 7.

Table 7

Summary of Coefficients of Internal Reliability for Each Stage of the SoCQ

Authors	*N*	Stages of Concern						
		0	1	2	3	4	5	6
Hall et al. (1977)	830	.64	.78	.83	.75	.76	.82	.71
Kolb (1983)	718	.75	.87	.72	.84	.79	.81	.82
Barucky (1984)	614	.60	.74	.81	.79	.81	.79	.72
Jordan-Marsh (1985)	214	.50	.78	.77	.82	.77	.81	.65
Martin (1989)	388	.78	.78	.73	.65	.71	.83	.76
Hall et al. (1991)	750	.63	.86	.65	.73	.74	.79	.81

Note. Adapted from *Measuring implementation in schools: The stages of concern questionnaire*, by George, A. A., Hall, G. E., & Stiegelbauer, S. M. (2006). Austin, TX: Southwest Educational Development Laboratory.

Data Collection Procedures

Permission to conduct this study was sought through the Baker University Institutional Review Board (IRB) (see Appendix C). The Baker University IRB granted permission to conduct the study on May 22, 2015. The study was not conducted immediately after IRB approval. Because the study was not conducted within a year, permission for an extension of the IRB approval was applied for and granted on November 16, 2016 (see Appendix D). The online version of the SoCQ was used to gather as many responses as possible from the survey population. The researcher was established as the survey administrator for the online questionnaire, resulting in a unique password and website link for respondents to access and complete the questionnaire online.

Potential respondents were contacted a minimum of three times through email communication during the survey period. The email contained a hyperlink to the website

for the survey and included a statement of informed consent to participate in the study. All email communication scripts are provided in Appendix E. The first email, sent on Sunday, February 12, 2017, was an invitation to participate in the survey with a brief background of the researcher and the importance of the study. This email also included the link and password for the respondent to complete the survey and stated that by participating, the respondent also provided consent. Emails two (2/20/2017) and three (3/6/2017) were reminders to complete the questionnaire, reinforced the importance of the response, and provided a "last chance" reminder for the potential respondents. Completion of the questionnaire was monitored using the SEDL website. At the completion of the survey period, data were collected from the administration website for the SoCQ. Preliminary analyses were completed using that website and the tools available.

Data Analysis and Hypothesis Testing

Survey data were compiled and analyzed using the software tools provided by the SEDL SoCQ online program, Microsoft Excel, and SPSS. The data were analyzed for group differences based on the following independent variables: (a) reported importance of assessment of student learning outcomes at their institution (high, moderate, low), (b) reported awareness of the Kansas Core Outcomes Group Project (high, moderate, low), (c) reported involvement in the Kansas Core Outcomes Group (high, moderate, low), (d) reported assessment methodology (summative, formative, or mixed), (e) school type (two-year, four-year), and (f) implementation year of common student learning outcomes (2012, 2013-2015).

RQ1. To what extent do faculty members rate their concerns about implementing KBOR approved student learning outcomes as "somewhat true of me now" or "very true of me now" on the Stages of Concern Survey?

H1. Faculty members rate their concerns about implementing KBOR approved student learning outcomes as "somewhat true of me now" or "very true of me now" on the Stages of Concern Survey.

To identify patterns, using the raw data from scored questionnaires, descriptive statistics such as mean scores for each of the seven stages of concern and mean scores for the self, task, and impact categories of concern were analyzed using one sample *t* tests against a null value of 10.

RQ2. To what extent are the mean scores of the SoCQ stage categories different among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution?

H2. The mean scores of the SoCQ self category are different among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution.

A two-factor analysis of variance (ANOVA) was conducted to test H2. The two categorical variables used to group the dependent variable, scores of the SoCQ self category, were importance of assessment (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for importance of assessment, a main effect for school type, and a two-way interaction effect (Importance of Assessment x School Type). The main effect for importance of assessment was used to test H2. The level of significance was set at .05.

H3. The mean scores of the SoCQ task category are different among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution.

A second two-factor ANOVA was conducted to test H3. The two categorical variables used to group the dependent variable, scores of the SoCQ task category, were importance of assessment (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for importance of assessment, a main effect for school type, and a two-way interaction effect (Importance of Assessment x School Type). The main effect for importance of assessment was used to test H3. The level of significance was set at .05.

H4. The mean scores of the SoCQ impact category are different among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution.

A third two-factor ANOVA was conducted to test H4. The two categorical variables used to group the dependent variable, scores of the SoCQ impact category, were importance of assessment (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for importance of assessment, a main effect for school type, and a two-way interaction effect (Importance of Assessment x School Type). The main effect for importance of assessment was used to test H4. The level of significance was set at .05.

RQ3. To what extent does school type affect the differences in the mean scores of the SoCQ stage categories among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution?

H5. School type affects the differences in the mean scores of the SoCQ self category among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution.

The first two-factor ANOVA was conducted to test H5. The two categorical variables used to group the dependent variable, scores of the SoCQ self category, were importance of assessment (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for importance of assessment, a main effect for school type, and a two-way interaction effect (Importance of Assessment x School Type). The interaction effect for importance of assessment by school type was used to test H5. The level of significance was set at .05.

H6. School type affects the differences in the mean scores of the SoCQ task category among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution.

The second two-factor ANOVA was conducted to test H6. The two categorical variables used to group the dependent variable, scores of the SoCQ task category, were importance of assessment (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for importance of assessment, a main effect for school type, and a two-way interaction effect (Importance of Assessment x School Type). The interaction effect for importance of assessment by school type was used to test H6. The level of significance was set at .05.

H7. School type affects the differences in mean scores of the SoCQ impact category among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution.

The third two-factor ANOVA was conducted to test H7. The two categorical variables used to group the dependent variable, scores of the SoCQ impact category, were importance of assessment (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for importance of assessment, a main effect for school type, and a two-way interaction effect (Importance of Assessment x School Type). The interaction effect for importance of assessment by school type was used to test H7. The level of significance was set at .05.

RQ4. To what extent does implementation year affect the differences in the mean scores of the SoCQ stage categories among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution?

H8. Implementation year affects the differences in the mean scores of the SoCQ self category among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution.

A fourth two-factor ANOVA was conducted to test H8. The two categorical variables used to group the dependent variable, scores of the SoCQ self category, were importance of assessment (low, moderate, high) and implementation year (2012, 2013-2015). The two-factor ANOVA can be used to test three hypotheses including a main effect for importance of assessment, a main effect for school type, and a two-way interaction effect (Importance of Assessment x Implementation Year). The interaction effect for importance of assessment by implementation year was used to test H8. The level of significance was set at .05.

H9. Implementation year affects the differences in the mean scores of the SoCQ task category among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution.

A fifth two-factor ANOVA was conducted to test H9. The two categorical variables used to group the dependent variable, scores of the SoCQ task category, were importance of assessment (low, moderate, high) and implementation year (2012, 2013-2015). The two-factor ANOVA can be used to test three hypotheses including a main effect for importance of assessment, a main effect for school type, and a two-way interaction effect (Importance of Assessment x Implementation Year). The interaction effect for importance of assessment by implementation year was used to test H9. The level of significance was set at .05.

H10. Implementation year affects the differences in mean scores of the SoCQ impact category among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution.

A sixth two-factor ANOVA was conducted to test H10. The two categorical variables used to group the dependent variable, scores of the SoCQ impact category, were importance of assessment (low, moderate, high) and implementation year (2012, 2013-2015). The two-factor ANOVA can be used to test three hypotheses including a main effect for importance of assessment, a main effect for school type, and a two-way interaction effect (Importance of Assessment x Implementation Year). The interaction effect for importance of assessment by implementation year was used to test H10. The level of significance was set at .05.

RQ5. To what extent are the mean scores of the SoCQ stage categories different among subgroups of faculty who report low, moderate, or high awareness of the KCOG?

H11. The mean scores of the SoCQ self category are different among subgroups of faculty who report low, moderate, or high awareness of the KCOG.

A seventh two-factor ANOVA was conducted to test H11. The two categorical variables used to group the dependent variable, scores of the SoCQ self category, were awareness of the KCOG (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for awareness of the KCOG, a main effect for school type, and a two-way interaction effect (Awareness of KCOG x School Type). The main effect for awareness of the KCOG was used to test H11. The level of significance was set at .05.

H12. The mean scores of the SoCQ task category are different among subgroups of faculty who report low, moderate, or high awareness of the KCOG.

An eighth two-factor ANOVA was conducted to test H12. The two categorical variables used to group the dependent variable, scores of the SoCQ task category, were awareness of the KCOG (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for awareness of the KCOG, a main effect for school type, and a two-way interaction effect (Awareness of KCOG x School Type). The main effect for awareness of the KCOG was used to test H12. The level of significance was set at .05.

H13. The mean scores of the SoCQ impact category are different among subgroups of faculty who report low, moderate, or high awareness of the KCOG.

A ninth two-factor ANOVA was conducted to test H13. The two categorical variables used to group the dependent variable, scores of the SoCQ impact category, were awareness of the KCOG (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for awareness of the KCOG, a main effect for school type, and a two-way interaction effect (Awareness of KCOG x School Type). The main effect for awareness of the KCOG was used to test H13. The level of significance was set at .05.

RQ6. To what extent does school type affect the differences in the mean scores of the SoCQ stage categories among subgroups of faculty who report low, moderate, or high awareness of the KCOG?

H14. School type affects the differences in the mean scores of the SoCQ self category among subgroups of faculty who report low, moderate, or high awareness of the KCOG.

The seventh two-factor ANOVA was conducted to test H14. The two categorical variables used to group the dependent variable, scores of the SoCQ self category, were awareness of the KCOG (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for awareness of the KCOG, a main effect for school type, and a two-way interaction effect (Awareness of KCOG x School Type). The interaction effect for awareness of the KCOG by school type was used to test H14. The level of significance was set at .05.

H15. School type affects the differences in the mean scores of the SoCQ task category among subgroups of faculty who report low, moderate, or high awareness of the KCOG.

The eighth two-factor ANOVA was conducted to test H15. The two categorical variables used to group the dependent variable, scores of the SoCQ task category, were awareness of the KCOG (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for awareness of the KCOG, a main effect for school type, and a two-way interaction effect (Awareness of KCOG x School Type). The interaction effect for awareness of the KCOG by school type was used to test H15. The level of significance was set at .05.

H16. School type affects the differences in mean scores of the SoCQ impact category among subgroups of faculty who report low, moderate, or high awareness of the KCOG.

The ninth two-factor ANOVA was conducted to test H16. The two categorical variables used to group the dependent variable, scores of the SoCQ impact category, were awareness of the KCOG (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for awareness of the KCOG, a main effect for school type, and a two-way interaction effect (Awareness of KCOG x School Type). The interaction effect for awareness of the KCOG by school type was used to test H16. The level of significance was set at .05.

RQ7. To what extent does implementation year affect the differences in the mean scores of the SoCQ stage categories among subgroups of faculty who report low, moderate, or high awareness of the KCOG?

H17. Implementation year affects the differences in the mean scores of the SoCQ self category among subgroups of faculty who report low, moderate, or high awareness of the KCOG.

A tenth two-factor ANOVA was conducted to test H17. The two categorical variables used to group the dependent variable, scores of the SoCQ self category, were awareness of the KCOG (low, moderate, high) and implementation year (2012, 2013-2015). The two-factor ANOVA can be used to test three hypotheses including a main effect for awareness of the KCOG, a main effect for school type, and a two-way interaction effect (Awareness of KCOG x Implementation Year). The interaction effect for awareness of the KCOG by implementation year was used to test H17. The level of significance was set at .05.

H18. Implementation year affects the differences in the mean scores of the SoCQ task category among subgroups of faculty who report low, moderate, or high awareness of the KCOG.

An eleventh two-factor ANOVA was conducted to test H18. The two categorical variables used to group the dependent variable, scores of the SoCQ task category, were awareness of the KCOG (low, moderate, high) and implementation year (2012, 2013-2015). The two-factor ANOVA can be used to test three hypotheses including a main effect for awareness of the KCOG, a main effect for school type, and a two-way interaction effect (Awareness of KCOG x Implementation Year). The interaction effect for awareness of the KCOG by implementation year was used to test H18. The level of significance was set at .05.

H19. Implementation year affects the differences in mean scores of the SoCQ impact category among subgroups of faculty who report low, moderate, or high awareness of the KCOG.

A twelfth two-factor ANOVA was conducted to test H19. The two categorical variables used to group the dependent variable, scores of the SoCQ impact category, were awareness of the KCOG (low, moderate, high) and implementation year (2012, 2013-2015). The two-factor ANOVA can be used to test three hypotheses including a main effect for awareness of the KCOG, a main effect for school type, and a two-way interaction effect (Awareness of KCOG x Implementation Year). The interaction effect for awareness of the KCOG by implementation year was used to test H19. The level of significance was set at .05.

RQ8. To what extent are the mean scores of the SoCQ stage categories different among subgroups of faculty who report low, moderate, or high involvement in the KCOG?

H20. The mean scores of the SoCQ self category are different among subgroups of faculty who report low, moderate, or high involvement in the KCOG.

A thirteenth two-factor ANOVA was conducted to test H20. The two categorical variables used to group the dependent variable, scores of the SoCQ self category, were involvement in the KCOG (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for involvement in the KCOG, a main effect for school type, and a two-way interaction effect (Involvement in KCOG x School Type). The main effect for involvement in the KCOG was used to test H20. The level of significance was set at .05.

H21. The mean scores of the SoCQ task category are different among subgroups of faculty who report low, moderate, or high involvement in the KCOG.

A fourteenth two-factor ANOVA was conducted to test H21. The two categorical variables used to group the dependent variable, scores of the SoCQ task category, were involvement in the KCOG (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for involvement in the KCOG, a main effect for school type, and a two-way interaction effect (Involvement in KCOG x School Type). The main effect for involvement in the KCOG was used to test H21. The level of significance was set at .05.

H22. The mean scores of the SoCQ impact category are different among subgroups of faculty who report low, moderate, or high involvement in the KCOG.

A fifteenth two-factor ANOVA was conducted to test H22. The two categorical variables used to group the dependent variable, scores of the SoCQ impact category, were involvement in the KCOG (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for involvement in the KCOG, a main effect for school type, and a two-way interaction effect (Involvement in KCOG x School Type). The main effect for involvement in the KCOG was used to test H22. The level of significance was set at .05.

RQ9. To what extent does school type affect the differences in the mean scores of the SoCQ stage categories among subgroups of faculty who report low, moderate, or high involvement in the KCOG?

H23. School type affects the differences in the mean scores of the SoCQ self category among subgroups of faculty who report low, moderate, or high involvement in the KCOG.

The thirteenth two-factor ANOVA was conducted to test H23. The two categorical variables used to group the dependent variable, scores of the SoCQ self category, were involvement in the KCOG (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for involvement in the KCOG, a main effect for school type, and a two-way interaction effect (Involvement in KCOG x School Type). The interaction effect for involvement in the KCOG by school type was used to test H23. The level of significance was set at .05.

H24. School type affects the differences in the mean scores of the SoCQ task category among subgroups of faculty who report low, moderate, or high involvement in the KCOG.

The fourteenth two-factor ANOVA was conducted to test H24. The two categorical variables used to group the dependent variable, scores of the SoCQ task category, were involvement in the KCOG (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for involvement in the KCOG, a main effect for school type, and a two-way interaction effect (Involvement in KCOG x School Type). The interaction effect for involvement in the KCOG by school type was used to test H24. The level of significance was set at .05.

H25. School type affects the differences in mean scores of the SoCQ impact category among subgroups of faculty who report low, moderate, or high involvement in the KCOG.

The fifteenth two-factor ANOVA was conducted to test H25. The two categorical variables used to group the dependent variable, scores of the SoCQ impact category, were involvement in the KCOG (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for involvement in the KCOG, a main effect for school type, and a two-way interaction effect (Involvement in KCOG x School Type). The interaction effect for involvement in the KCOG by school type was used to test H25. The level of significance was set at .05.

RQ10. To what extent does implementation year affect the differences in the mean scores of the SoCQ stage categories among subgroups of faculty who report low, moderate, or high involvement in the KCOG?

H26. Implementation year affects the differences in the mean scores of the SoCQ self category among subgroups of faculty who report low, moderate, or high involvement in the KCOG.

A sixteenth two-factor ANOVA was conducted to test H26. The two categorical variables used to group the dependent variable, scores of the SoCQ self category, were involvement in the KCOG (low, moderate, high) and implementation year (2012, 2013-2015). The two-factor ANOVA can be used to test three hypotheses including a main effect for involvement in the KCOG, a main effect for school type, and a two-way interaction effect (Involvement in KCOG x Implementation Year). The interaction effect for involvement in the KCOG by implementation year was used to test H26. The level of significance was set at .05.

H27. Implementation year affects the differences in the mean scores of the SoCQ task category among subgroups of faculty who report low, moderate, or high involvement in the KCOG.

A seventeenth two-factor ANOVA was conducted to test H27. The two categorical variables used to group the dependent variable, scores of the SoCQ task category, were involvement in the KCOG (low, moderate, high) and implementation year (2012, 2013-2015). The two-factor ANOVA can be used to test three hypotheses including a main effect for involvement in the KCOG, a main effect for school type, and a two-way interaction effect (Involvement in KCOG x Implementation Year). The interaction effect for involvement in the KCOG by implementation year was used to test H27. The level of significance was set at .05.

H28. Implementation year affects the differences in mean scores of the SoCQ impact category among subgroups of faculty who report low, moderate, or high involvement in the KCOG.

An eighteenth two-factor ANOVA was conducted to test H28. The two categorical variables used to group the dependent variable, scores of the SoCQ impact category, were involvement in the KCOG (low, moderate, high) and implementation year (2012, 2013-2015). The two-factor ANOVA can be used to test three hypotheses including a main effect for involvement in the KCOG, a main effect for school type, and a two-way interaction effect (Involvement in KCOG x Implementation Year). The interaction effect for involvement in the KCOG by implementation year was used to test H28. The level of significance was set at .05.

RQ11. To what extent are the mean scores of the SoCQ stage categories different among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution?

H29. The mean scores of the SoCQ self category are different among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution.

A nineteenth two-factor ANOVA was conducted to test H29. The two categorical variables used to group the dependent variable, scores of the SoCQ self category, were assessment method (formative, summative, mixed) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for assessment method, a main effect for school type, and a two-way interaction effect (Assessment Method x School Type). The main effect for assessment method was used to test H29. The level of significance was set at .05.

H30. The mean scores of the SoCQ task category are different among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution.

A twentieth two-factor ANOVA was conducted to test H30. The two categorical variables used to group the dependent variable, scores of the SoCQ task category, were assessment method (formative, summative, mixed) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for assessment method, a main effect for school type, and a two-way interaction effect (Assessment Method x School Type). The main effect for assessment method was used to test H30. The level of significance was set at .05.

H31. The mean scores of the SoCQ impact category are different among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution.

A twenty-first two-factor ANOVA was conducted to test H31. The two categorical variables used to group the dependent variable, scores of the SoCQ impact category, were assessment method (formative, summative, mixed) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for assessment method, a main effect for school type, and a two-way interaction effect (Assessment Method x School Type). The main effect for assessment method was used to test H31. The level of significance was set at .05.

RQ12. To what extent does school type affect the differences in the mean scores of the SoCQ stage categories among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution?

H32. School type affects the differences in the mean scores of the SoCQ self category among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution.

The nineteenth two-factor ANOVA was conducted to test H32. The two categorical variables used to group the dependent variable, scores of the SoCQ self category, were assessment method (formative, summative, mixed) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for assessment method, a main effect for school type, and a two-way interaction effect (Assessment Method x School Type). The interaction effect for

assessment method by school type was used to test H32. The level of significance was set at .05.

H33. School type affects the differences in the mean scores of the SoCQ task category among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution.

The twentieth two-factor ANOVA was conducted to test H33. The two categorical variables used to group the dependent variable, scores of the SoCQ task category, were assessment method (formative, summative, mixed) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for assessment method, a main effect for school type, and a two-way interaction effect (Assessment Method x School Type). The interaction effect for assessment method by school type was used to test H33. The level of significance was set at .05.

H34. School type affects the differences in mean scores of the SoCQ impact category among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution.

The twenty-first two-factor ANOVA was conducted to test H34. The two categorical variables used to group the dependent variable, scores of the SoCQ impact category, were assessment method (formative, summative, mixed) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for assessment method, a main effect for school type, and a two-way interaction effect (Assessment Method x School Type). The interaction effect for

assessment method by school type was used to test H34. The level of significance was set at .05.

RQ13. To what extent does implementation year affect the differences in the mean scores of the SoCQ stage categories among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution?

H35. Implementation year affects the differences in the mean scores of the SoCQ self category among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution.

A twenty-second two-factor ANOVA was conducted to test H35. The two categorical variables used to group the dependent variable, scores of the SoCQ self category, were assessment method (formative, summative, mixed) and implementation year (2012, 2013-2015). The two-factor ANOVA can be used to test three hypotheses including a main effect for assessment method, a main effect for school type, and a two-way interaction effect (Assessment Method x Implementation Year). The interaction effect for assessment method by implementation year was used to test H35. The level of significance was set at .05.

H36. Implementation year affects the differences in the mean scores of the SoCQ task category among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution.

A twenty-third two-factor ANOVA was conducted to test H36. The two categorical variables used to group the dependent variable, scores of the SoCQ task category, were assessment method (formative, summative, mixed) and implementation year (2012, 2013-2015). The two-factor ANOVA can be used to test three hypotheses

including a main effect for assessment method, a main effect for school type, and a two-way interaction effect (Assessment Method x Implementation Year). The interaction effect for assessment method by implementation year was used to test H36. The level of significance was set at .05.

H37. Implementation year affects the differences in mean scores of the SoCQ impact category among subgroups of faculty who report the use of a formative, summative, or mixed method of assessment at their institution.

A twenty-fourth two-factor ANOVA was conducted to test H37. The two categorical variables used to group the dependent variable, scores of the SoCQ impact category, were assessment method (formative, summative, mixed) and implementation year (2012, 2013-2015). The two-factor ANOVA can be used to test three hypotheses including a main effect for assessment method, a main effect for school type, and a two-way interaction effect (Assessment Method x Implementation Year). The interaction effect for assessment method by implementation year was used to test H37. The level of significance was set at .05.

Limitations

Several limitations were identified for the current study. Knowledge of assessment of student learning may have varied among participants and influenced their responses to the questionnaire. In addition, the researcher did not know how carefully the participants read the instructions and the individual items. Also, some faculty members may have preferred taking the survey on paper or in person, rather than using an online administration. Some faculty members may not have been comfortable providing honest

responses, even though they were informed that responses were anonymous and only reported as aggregated data by school type.

Summary

Chapter three provided a description of the methodology used to complete this research. Included were the research questions and hypotheses, a description of the research design of the study and associated methods. The population of interest for this study was faculty members at public technical colleges, community colleges, and universities in Kansas who teach general education courses identified as seamless transfer courses in the state. Data collection and analysis was described in this chapter along with validity and reliability information. Limitations of the study were also described in this chapter. Chapter four provides the results of the statistical analyses and hypothesis testing completed for this study.

Chapter Four

Results

The purpose of this study was to determine the perceptions of Kansas public higher education faculty on factors related to the implementation of common student learning outcomes in general education courses. Specifically, the importance of assessment of student learning outcomes, awareness of the Kansas Core Outcomes Group, involvement with the Kansas Core Outcomes Group, assessment methods, and implementation year of core student learning outcomes in two-year and four-year public higher education institutions in Kansas were investigated. Presented in chapter four are the results of hypothesis testing.

Descriptive Statistics

General education faculty members at Kansas public universities, community colleges, and technical colleges comprised the population of interest in this study. A total of 195 surveys were completed and included in this study out of 677 total invitations. The response rate for this survey was 28.80%. The majority of the responses were from faculty members at community colleges in Kansas. Table 8 presents the distribution of respondents based on school type. Due to the distribution of the responses, in order to conduct hypothesis testing, school type was collapsed into two-year and four-year institutions.

Table 8

School Type Distribution of Survey Respondents

School Type	*N*	*%*
Technical College	12	6.15
Community College	138	70.77
University	45	23.08

The survey tool was designed for respondents to select the general education courses they have taught, and the survey allowed them to select all that applied. Two survey responses were eliminated from the statistical analysis due to irregular or suspicious responses. Appendix F provides a complete listing of frequencies associated with the courses. In many cases, an individual respondent was associated with multiple courses on the list. To identify the earliest implementation year for each respondent, an extra data analysis step was completed. As an output of the raw data, all the courses selected by a respondent were included in one data cell for each respondent. This one data cell subsequently had to be separated using a text to column function in Excel. Once that was completed, the courses per respondent were evaluated. The first course implemented by each respondent was identified with a year (2012, 2013, 2014, or 2015) depending on what year the course was approved through the KCOG system. Due to the distribution of implementation years, two categories were defined for the hypothesis testing: 2012 and 2013-2015. Table 9 describes the frequencies and percentages associated with implementation year. Data from three respondents were not included due to missing or invalid information.

Table 9

Implementation Year Frequencies and Percentages

Implementation Year	*N*	*%*
2012	139	71.28
2013-2015	53	27.18

Differences in the stages of concern were assessed based on six independent variables: (a) faculty member's perception of the importance of assessment of student learning outcomes at their institution, (b) faculty member's awareness of the Kansas Core Outcomes Group Project, (c) faculty member's reported involvement in the Kansas Core Outcomes Group, and (d) the primary method of assessment of student learning at the respondent's institution (summative, formative, or mixed), (e) school type (two-year or four-year), and (f) implementation year of common student learning outcomes (2012, 2013-2015). Participants responded to the variable questions a, b, and c by selecting high, moderate, or low on the survey. Table 10 presents frequency data associated with these variables. Due to the very low frequency of the response of "low" to the question of importance of assessing student learning outcomes at their institution, the "low" and "moderate" responses were combined for the data analysis for that variable.

Table 10

Frequency of Responses to the Importance of Assessment and KCOG Items (Percentages in Parentheses)

Variable	High	Moderate	Low
Importance of Assessment	152 (77.95)	40 (20.51)	3 (1.53)
Awareness of KCOG	112 (57.44)	48 (24.61)	35 (17.95)
Involvement in KCOG	57 (29.23)	59 (30.26)	79 (40.51)

The frequency data associated with the reported primary method of assessment of student learning at the respondent's institution (summative, formative, or mixed) are listed in Table 11.

Table 11

Frequency of Assessment Methods and Percentages

Assessment Method	N	%
Formative	31	15.90
Summative	54	27.69
Mixed	110	56.41

Hypothesis Testing

Thirty-seven hypotheses were tested based on 13 research questions. Survey data were compiled and analyzed for group differences based on six independent variables including: (a) reported importance of assessment of student learning outcomes at their institution, (b) reported awareness of the Kansas Core Outcomes Group Project, (c) reported involvement in the Kansas Core Outcomes Group, (d) the primary method of assessment of student learning at the respondent's institution (summative, formative, or

mixed), (e) school type (two-year or four-year), and (f) implementation year of common student learning outcomes (2012, 2013-2015). One sample *t* tests were completed for the stages of concern (0-7) and the stage categories (self, task, and impact) to test H1. Also, 24 two-factor ANOVAs were completed to test the remaining hypotheses (H2-H37).

RQ1. To what extent do faculty members rate their concerns about implementing KBOR approved student learning outcomes as "somewhat true of me now" or "very true of me now" on the Stages of Concern Survey?

H1. Faculty members rate their concerns about implementing KBOR approved student learning outcomes as "somewhat true of me now" or "very true of me now" on the Stages of Concern Survey.

To identify patterns, using the raw data from scored questionnaires, descriptive statistics such as mean scores for each of the seven stages of concern and mean scores for the Self, Task, and Impact categories of concern were analyzed using one sample *t* tests to test the mean against a null value of 10. The results of the one sample *t* tests for the seven stages of concern are presented in Table 12. For each stage, the mean rating was higher than the null value of 10. All results were significant at .05.

Table 12

Results of One Sample t Tests for all Stages of Concern

Stage	*t*	*df*	*p*
0	11.929	194	0.000
1	11.003	194	0.000
2	11.925	194	0.000
3	3.519	194	0.001
4	9.346	194	0.000
5	7.945	194	0.000
6	2.493	194	0.013

The means in Figure 1 provide evidence that faculty tended to rate the stages as "somewhat true of me". The highest mean (M = 17.251) was reported for stage 2 items which indicates that the respondents were uncertain about their role with the innovation. The lowest rating (M = 11.221) was reported for stage 6 items which indicates that the respondents were exploring ways to obtain more benefits from the innovation including manipulating it through change or replacement.

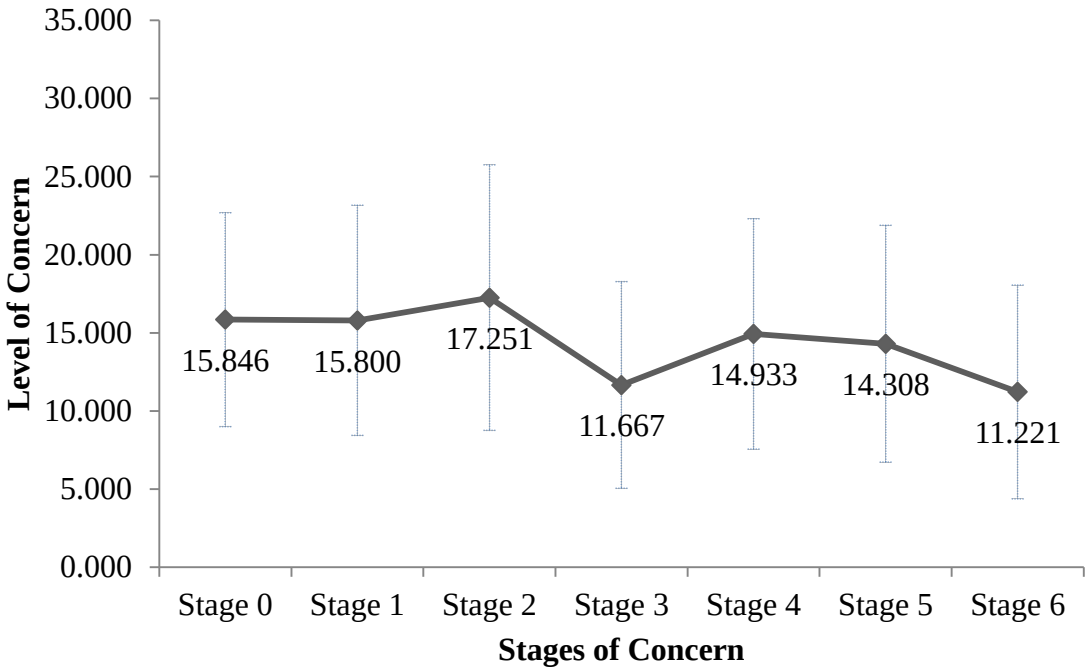

Figure 1. Means for Seven Stages of Concern. The line chart in this figure represents the means for seven stages of concern. For each mean, the error bars are included. The cap at the top and bottom of each error bar indicates the standard deviation associated with the mean for that stage.

George, Hall, and Stiegelbauer (2006) grouped the SoCQ survey stages of concern into 3 categories: Self (stages 0-2), Task (stage 3), and Impact (stages 4-6). The descriptive statistics completed here included an average and standard deviation for each category. To identify patterns, using the raw data from scored questionnaires, descriptive statistics such as mean scores for the self, task, and impact categories of concern were analyzed using one sample *t* tests against a null value of 10. The results of the one sample *t* tests for the self, task, and impact categories of concern are presented in Table 13. For each category, the mean rating was higher than the null value of 10 and the response was "somewhat true of me now." All results were significant at .05. H1, which stated that faculty members rate their concerns about implementing KBOR approved

student learning outcomes as “somewhat true of me now” or “very true of me now” on the Stages of Concern Survey, was supported.

Table 13

Results of One-Sample t Tests for the Self, Task, and Impact Stages Categories

Category of Concern	*t*	*df*	*p*
Self	14.726	194	0.000
Task	3.519	194	0.001
Impact	7.649	194	0.000

The means in Figure 2 provide evidence that faculty tended to rate the categories as “somewhat true of me now.” The highest mean (M = 16.299) was calculated for the SoCQ self category items. The SoCQ self stage suggests the respondents are unconcerned for or unaware of the innovation; in this case, the innovation is implementing common student learning outcomes in general education courses.

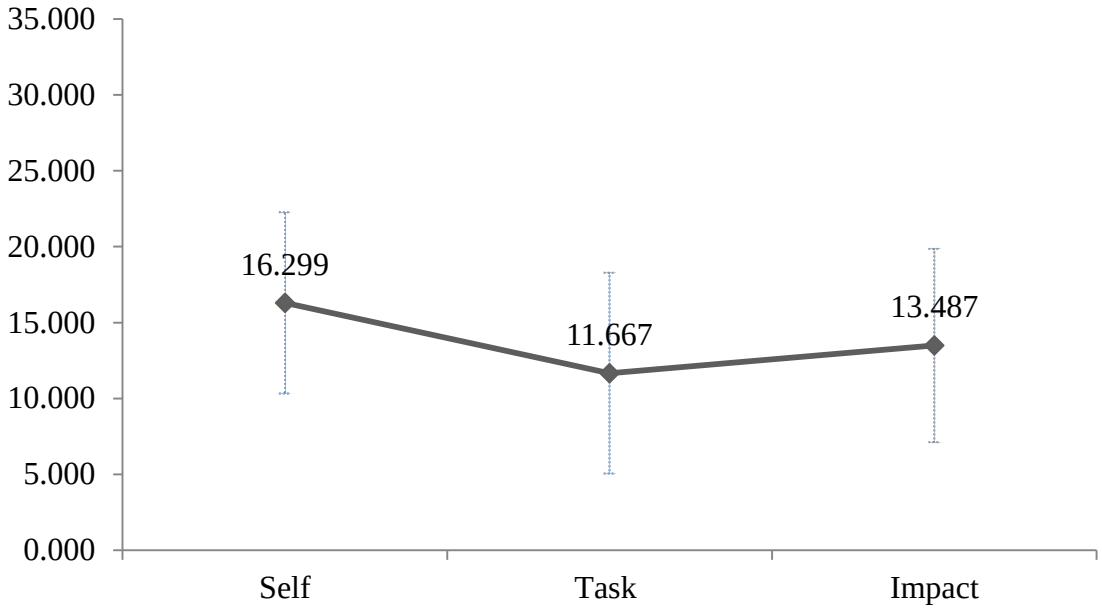

Figure 2. Means for Self, Task, and Impact Stage Categories. The line chart in this figure represents the means for the Self, Task, and Impact stage categories. For each mean, the error bars are included. The cap at the top and bottom of each error bar indicates the standard deviation associated with the mean for that stage category.

RQ2. To what extent are the mean scores of the SoCQ stage categories different among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution?

H2. The mean scores of the SoCQ self category are different among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution.

A two-factor ANOVA was conducted to test H2. The two categorical variables used to group the dependent variable, scores of the SoCQ self category, were importance of assessment (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for importance of assessment, a main effect for school type, and a two-way interaction effect

(Importance of Assessment x School Type). The main effect for importance of assessment was used to test H2. The level of significance was set at .05. The results of the analysis indicated a marginally significant difference between the means, $F = 2.029$, $df = 1, 191$, $p = .156$. A follow-up post hoc was not warranted. Although the result was not statistically significant, the average SoCQ self category rating for faculty members who reported that assessment of student learning is of high importance at their institution ($M = 15.829$, $SD = 6.113$) was lower than the average SoCQ self category rating for faculty members who reported that assessment is of moderate to low importance ($M = 17.961$, $SD = 5.180$). H2, which stated that the mean scores of the SoCQ self category are different among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution, was supported.

H3. The mean scores of the SoCQ task category are different among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution.

A second two-factor ANOVA was conducted to test H3. The two categorical variables used to group the dependent variable, scores of the SoCQ task category, were importance of assessment (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for importance of assessment, a main effect for school type, and a two-way interaction effect (Importance of Assessment x School Type). The main effect for importance of assessment was used to test H3. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between the

means, $F = .004$, $df = 1, 191$, $p = .947$. A follow-up post hoc was not warranted. The average SoCQ task category rating for faculty members who reported that assessment of student learning is of high importance at their institution ($M = 11.632$, $SD = 6.829$) was not different from the average SoCQ task stage category rating for faculty members who reported that assessment is of moderate to low importance ($M = 11.791$, $SD = 5.862$). H3, which stated that the mean scores of the SoCQ task category are different among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution, was not supported.

H4. The mean scores of the SoCQ impact category are different among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution.

A third two-factor ANOVA was conducted to test H4. The two categorical variables used to group the dependent variable, scores of the SoCQ impact category, were importance of assessment (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for importance of assessment, a main effect for school type, and a two-way interaction effect (Importance of Assessment x School Type). The main effect for importance of assessment was used to test H4. The level of significance was set at .05. The results of the analysis indicated a marginally significant difference between the means, $F = 1.833$, $df = 1, 191$, $p = .177$. A follow-up post hoc was not warranted. Although the result was not statistically significant, the average SoCQ impact stage category rating for faculty members who reported that assessment of student learning is of high importance at their institution ($M = 13.969$, $SD = 6.366$) was higher than the average SoCQ impact

stage category rating for faculty members who reported that assessment is of moderate to low importance (M = 11.783, SD = 6.140). H4, which stated that the mean scores of the SoCQ impact category are different among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution, was supported.

RQ3. To what extent does school type affect the differences in the mean scores of the SoCQ stage categories among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution?

H5. School type affects the differences in the mean scores of the SoCQ self category among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution.

The first two-factor ANOVA was conducted to test H5. The two categorical variables used to group the dependent variable, scores of the SoCQ self category, were importance of assessment (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for importance of assessment, a main effect for school type, and a two-way interaction effect (Importance of Assessment x School Type). The interaction effect for importance of assessment by school type was used to test H5. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, F = .530, df = 1, 191, p = .467. See Table 14 for the means and standard deviations for this analysis. A follow-up post hoc was not warranted. H5, which stated that school type affects the differences in the mean scores of the SoCQ

self category among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution, was not supported.

Table 14

Descriptive Statistics for the Results of the Test for H5

Importance	School Type	*M*	*SD*	*N*
High	Four-Year	17.355	6.348	31
	Two-Year	15.438	6.016	121
Low or Moderate	Four-Year	18.143	4.576	14
	Two-Year	17.874	5.524	29

H6. School type affects the differences in the mean scores of the SoCQ task category among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution.

The second two-factor ANOVA was conducted to test H6. The two categorical variables used to group the dependent variable, scores of the SoCQ task category, were importance of assessment (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for importance of assessment, a main effect for school type, and a two-way interaction effect (Importance of Assessment x School Type). The interaction effect for importance of assessment by school type was used to test H6. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = .023$, $df = 1, 191$, $p = .881$. See Table 15 for the means and standard deviations for this analysis. A follow-up post hoc was not warranted. H6, which stated that school type affects the differences in the mean scores of the SoCQ

task category among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution, was not supported.

Table 15

Descriptive Statistics for the Results of the Test for H6

Importance	School Type	*M*	*SD*	*N*
High	Four-Year	11.677	6.441	31
	Two-Year	11.620	6.950	121
Low or Moderate	Four-Year	11.571	5.983	14
	Two-Year	11.897	5.906	29

H7. School type affects the differences in mean scores of the SoCQ impact category among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution.

The third two-factor ANOVA was conducted to test H7. The two categorical variables used to group the dependent variable, scores of the SoCQ impact category, were importance of assessment (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for importance of assessment, a main effect for school type, and a two-way interaction effect (Importance of Assessment x School Type). The interaction effect for importance of assessment by school type was used to test H7. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = .130$, $df = 1, 191$, $p = .719$. See Table 16 for the means and standard deviations for this analysis. A follow-up post hoc was not warranted. H7, which stated that school type affects the differences in the mean scores of the SoCQ

impact category among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution, was not supported.

Table 16

Descriptive Statistics for the Results of the Test for H7

Importance	School Type	*M*	*SD*	*N*
High	Four-Year	11.129	5.580	31
	Two-Year	14.697	6.371	121
Low or Moderate	Four-Year	9.952	6.271	14
	Two-Year	12.667	5.984	29

RQ4. To what extent does implementation year affect the differences in the mean scores of the SoCQ stage categories among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution?

H8. Implementation year affects the differences in the mean scores of the SoCQ self category among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution.

A fourth two-factor ANOVA was conducted to test H8. The two categorical variables used to group the dependent variable, scores of the SoCQ self category, were importance of assessment (low, moderate, high) and implementation year (2012, 2013-2015). The two-factor ANOVA can be used to test three hypotheses including a main effect for importance of assessment, a main effect for school type, and a two-way interaction effect (Importance of Assessment x Implementation Year). The interaction

effect for importance of assessment by implementation year was used to test H8. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = .200$, $df = 1, 188$, $p = .655$. See Table 17 for the means and standard deviations for this analysis. A follow-up post hoc was not warranted. H8, which stated that implementation year affects the differences in the mean scores of the SoCQ self category among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution, was not supported.

Table 17

Descriptive Statistics for the Results of the Test for H8

Importance	Implementation Year	*M*	*SD*	*N*
High	2012	15.501	6.107	113
	2013-2015	16.784	6.194	37
Low or Moderate	2012	17.744	5.757	26
	2013-2015	18.042	4.307	16

H9. Implementation year affects the differences in the mean scores of the SoCQ task category among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution.

A fifth two-factor ANOVA was conducted to test H9. The two categorical variables used to group the dependent variable, scores of the SoCQ task category, were importance of assessment (low, moderate, high) and implementation year (2012, 2013-2015). The two-factor ANOVA can be used to test three hypotheses including a main effect for importance of assessment, a main effect for school type, and a two-way

interaction effect (Importance of Assessment x Implementation Year). The interaction effect for importance of assessment by implementation year was used to test H9. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = .046$, $df = 1, 188$, $p = .831$. See Table 18 for the means and standard deviations for this analysis. A follow-up post hoc was not warranted. H9, which stated that implementation year affects the differences in the mean scores of the SoCQ task category among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution, was not supported.

Table 18

Descriptive Statistics for the Results of the Test for H9

Importance	Implementation Year	*M*	*SD*	*N*
High	2012	11.876	7.157	113
	2013-2015	10.811	5.705	37
Low or Moderate	2012	12.038	5.632	26
	2013-2015	11.500	6.552	16

H10. Implementation year affects the differences in mean scores of the SoCQ impact category among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution.

A sixth two-factor ANOVA was conducted to test H10. The two categorical variables used to group the dependent variable, scores of the SoCQ impact category, were importance of assessment (low, moderate, high) and implementation year (2012, 2013-2015). The two-factor ANOVA can be used to test three hypotheses including a main

effect for importance of assessment, a main effect for school type, and a two-way interaction effect (Importance of Assessment x Implementation Year). The interaction effect for importance of assessment by implementation year was used to test H10. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = .026$, $df = 1, 188$, $p = .873$. See Table 19 for the means and standard deviations for this analysis. A follow-up post hoc was not warranted. H10, which stated that implementation year affects the differences in the mean scores of the SoCQ impact stage category among subgroups of faculty who report low, moderate, or high importance of assessment of student learning outcomes at their institution, was not supported.

Table 19

Descriptive Statistics for the Results of the Test for H10

Importance	Implementation Year	*M*	*SD*	*N*
High	2012	14.401	6.487	113
	2013-2015	12.784	6.041	37
Low or Moderate	2012	12.679	5.976	26
	2013-2015	10.688	6.415	16

RQ5. To what extent are the mean scores of the SoCQ stage categories different among subgroups of faculty who report low, moderate, or high awareness of the KCOG?

H11. The mean scores of the SoCQ self category are different among subgroups of faculty who report low, moderate, or high awareness of the KCOG.

A seventh two-factor ANOVA was conducted to test H11. The two categorical variables used to group the dependent variable, scores of the SoCQ self category, were

awareness of the KCOG (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for awareness of the KCOG, a main effect for school type, and a two-way interaction effect (Awareness of KCOG x School Type). The main effect for awareness of the KCOG was used to test H11. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = 1.287$, $df = 2, 189$, $p = .279$. A follow-up post hoc was not warranted. The average SoCQ self category rating for faculty members who reported high awareness of KCOG ($M = 15.411$, $SD = 5.680$) was not different from the average SoCQ self category rating for faculty members who reported low awareness of KCOG ($M = 18.533$, $SD = 7.113$). H11, which stated that the mean scores of the SoCQ self category are different among subgroups of faculty who report low, moderate, or high awareness of the KCOG, was not supported.

H12. The mean scores of the SoCQ task category are different among subgroups of faculty who report low, moderate, or high awareness of the KCOG.

An eighth two-factor ANOVA was conducted to test H12. The two categorical variables used to group the dependent variable, scores of the SoCQ task category, were awareness of the KCOG (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for awareness of the KCOG, a main effect for school type, and a two-way interaction effect (Awareness of KCOG x School Type). The main effect for awareness of the KCOG was used to test H12. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the

means, $F = .918$, $df = 2, 189$, $p = .401$. The average SoCQ task category rating for faculty members who reported high awareness of the KCOG (M=11.632, $SD = 6.829$) was not different from the average SoCQ task category rating for faculty members who reported low or moderate awareness of the KCOG (M = 11.791, SD = 5.862). A follow-up post hoc was not warranted. H12, which stated that the mean scores of the SoCQ task category are different among subgroups of faculty who report low, moderate, or high awareness of the KCOG, was not supported.

H13. The mean scores of the SoCQ impact category are different among subgroups of faculty who report low, moderate, or high awareness of the KCOG.

A ninth two-factor ANOVA was conducted to test H13. The two categorical variables used to group the dependent variable, scores of the SoCQ impact category, were awareness of the KCOG (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for awareness of the KCOG, a main effect for school type, and a two-way interaction effect (Awareness of KCOG x School Type). The main effect for awareness of the KCOG was used to test H13. The level of significance was set at .05. The results of the analysis indicated a statistically significant difference between at least two of the means, $F = 9.709$, $df = 2, 189$, $p = .000$. Based on the results of the Tukey HSD post hoc test all the means were significantly different from one another. The average SoCQ impact category rating for faculty members who reported high awareness of KCOG ($M = 15.381$, $SD = 6.082$) was higher than the Impact stage category rating for faculty members who reported low awareness of KCOG ($M = 8.610$, $SD = 5.387$) and faculty members who reported moderate awareness of KCOG ($M = 12.6255$, $SD = 5.649$). H13, which stated

that the mean scores of the SoCQ impact Category are different among subgroups of faculty who report low, moderate, or high awareness of the KCOG, was supported.

RQ6. To what extent does school type affect the differences in the mean scores of the SoCQ stage categories among subgroups of faculty who report low, moderate, or high awareness of the KCOG?

H14. School type affects the differences in the mean scores of the SoCQ self category among subgroups of faculty who report low, moderate, or high awareness of the KCOG.

The seventh two-factor ANOVA was conducted to test H14. The two categorical variables used to group the dependent variable, scores of the SoCQ self category, were awareness of the KCOG (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for awareness of the KCOG, a main effect for school type, and a two-way interaction effect (Awareness of KCOG x School Type). The interaction effect for awareness of the KCOG by school type was used to test H14. The level of significance was set at .05. The results of the analysis indicated a marginally significant difference between the means, $F = 2.005$, $df = 2, 189$, $p = .137$. See Table 20 for the means and standard deviations for this analysis. A follow-up post hoc was not warranted. Although not statistically significant, the average SoCQ self category rating for faculty members at four year institutions who reported high and low awareness of the KCOG ($M = 18.567$, $SD = 4.954$, $M = 18.963$, $SD = 6.635$) was higher than the average SoCQ self category rating for faculty members at four year institutions who reported moderate awareness of the KCOG ($M = 15.588$, $SD = 5.039$). H14, which stated that school type affects the

differences in the mean scores of the SoCQ self category among subgroups of faculty who report low, moderate, or high awareness of the KCOG, was supported.

Table 20

Descriptive Statistics for the Results of the Test for H14

Awareness	School Type	*M*	*SD*	*N*
High	Four-Year	18.567	4.954	10
	Two-Year	15.101	5.673	102
Low	Four-Year	18.963	6.635	18
	Two-Year	18.078	7.765	17
Moderate	Four-Year	15.588	5.039	17
	Two-Year	17.376	5.499	31

H15. School type affects the differences in the mean scores of the SoCQ task category among subgroups of faculty who report low, moderate, or high awareness of the KCOG.

The eighth two-factor ANOVA was conducted to test H15. The two categorical variables used to group the dependent variable, scores of the SoCQ task category, were awareness of the KCOG (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for awareness of the KCOG, a main effect for school type, and a two-way interaction effect (Awareness of KCOG x School Type). The interaction effect for awareness of the KCOG by school type was used to test H15. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = 1.048$, $df = 2, 189$, $p = .353$. See Table 21 for the

means and standard deviations for this analysis. A follow-up post hoc was not warranted. H15, which stated that the school type affects the differences in the mean scores of the SoCQ task category among subgroups of faculty who report low, moderate, or high awareness of the KCOG, was not supported.

Table 21

Descriptive Statistics for the Results of the Test for H15

Awareness	School Type	*M*	*SD*	*N*
High	Four-Year	14.300	4.692	10
	Two-Year	11.549	6.567	102
Low	Four-Year	9.944	6.235	18
	Two-Year	11.647	7.615	17
Moderate	Four-Year	11.882	6.744	17
	Two-Year	12.097	7.035	31

H16. School type affects the differences in mean scores of the SoCQ impact category among subgroups of faculty who report low, moderate, or high awareness of the KCOG.

The ninth two-factor ANOVA was conducted to test H16. The two categorical variables used to group the dependent variable, scores of the SoCQ impact category, were awareness of the KCOG (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for awareness of the KCOG, a main effect for school type, and a two-way interaction effect (Awareness of KCOG x School Type). The interaction effect for awareness of the KCOG by school type was used to test H16. The level of significance was set at .05.

The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = .034$, $df = 2, 189$, $p = .967$. See Table 22 for the means and standard deviations for this analysis. A follow-up post hoc was not warranted. H16, which stated that school type affects the differences in mean scores of the SoCQ impact category among subgroups of faculty who report low, moderate, or high awareness of the KCOG, was not supported.

Table 22

Descriptive Statistics for the Results of the Test for H16

Awareness	School Type	*M*	*SD*	*N*
High	Four-Year	13.867	4.910	10
	Two-Year	15.529	6.185	102
Low	Four-Year	8.148	4.691	18
	Two-Year	9.098	6.148	17
Moderate	Four-Year	11.706	6.291	17
	Two-Year	13.129	5.305	31

RQ7. To what extent does implementation year affect the differences in the mean scores of the SoCQ stage categories among subgroups of faculty who report low, moderate, or high awareness of the KCOG?

H17. Implementation year affects the differences in the mean scores of the SoCQ self category among subgroups of faculty who report low, moderate, or high awareness of the KCOG.

A tenth two-factor ANOVA was conducted to test H17. The two categorical variables used to group the dependent variable, scores of the SoCQ self category, were

awareness of the KCOG (low, moderate, high) and implementation year (2012, 2013-2015). The two-factor ANOVA can be used to test three hypotheses including a main effect for awareness of the KCOG, a main effect for school type, and a two-way interaction effect (Awareness of KCOG x Implementation Year). The interaction effect for awareness of the KCOG by implementation year was used to test H17. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = 1.188$, $df = 2, 186$, $p = .307$. See Table 23 for the means and standard deviations for this analysis. A follow-up post hoc was not warranted. H17, which stated that implementation year affects the differences in the mean scores of the SoCQ self category among subgroups of faculty who report low, moderate, or high awareness of the KCOG, was not supported.

Table 23

Descriptive Statistics for the Results of the Test for H17

Awareness	Implementation Year	*M*	*SD*	*N*
High	2012	15.070	5.557	90
	2013-2015	17.016	6.159	21
Low	2012	19.333	7.982	16
	2013-2015	17.412	6.671	17
Moderate	2012	16.586	5.972	33
	2013-2015	17.089	3.827	15

H18. Implementation year affects the differences in the mean scores of the SoCQ task category among subgroups of faculty who report low, moderate, or high awareness of the KCOG.

An eleventh two-factor ANOVA was conducted to test H18. The two categorical variables used to group the dependent variable, scores of the SoCQ task category, were awareness of the KCOG (low, moderate, high) and implementation year (2012, 2013-2015). The two-factor ANOVA can be used to test three hypotheses including a main effect for awareness of the KCOG, a main effect for school type, and a two-way interaction effect (Awareness of KCOG x Implementation Year). The interaction effect for awareness of the KCOG by implementation year was used to test H18. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = .878$, $df = 2, 186$, $p = .417$. See Table 24 for the means and standard deviations for this analysis. A follow-up post hoc was not warranted. H18, which stated that implementation year affects the differences in the mean scores of the SoCQ task category among subgroups of faculty who report low, moderate, or high awareness of the KCOG, was not supported.

Table 24

Descriptive Statistics for the Results of the Test for H18

Awareness	Implementation Year	*M*	*SD*	*N*
High	2012	11.689	6.727	90
	2013-2015	12.524	5.240	21
Low	2012	11.313	8.138	16
	2013-2015	9.765	5.663	17
Moderate	2012	12.788	6.786	33
	2013-2015	10.333	6.956	15

H19. Implementation year affects the differences in mean scores of the SoCQ impact category among subgroups of faculty who report low, moderate, or high awareness of the KCOG.

A twelfth two-factor ANOVA was conducted to test H19. The two categorical variables used to group the dependent variable, scores of the SoCQ impact category, were awareness of the KCOG (low, moderate, high) and implementation year (2012, 2013-2015). The two-factor ANOVA can be used to test three hypotheses including a main effect for awareness of the KCOG, a main effect for school type, and a two-way interaction effect (Awareness of KCOG x Implementation Year). The interaction effect for awareness of the KCOG by implementation year was used to test H19. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = .063$, $df = 2, 186$, $p = .939$. See Table 25 for the means and standard deviations for this analysis. A follow-up post hoc was not warranted. H19, which stated that

implementation year affects the differences in mean scores of the SoCQ impact category among subgroups of faculty who report low, moderate, or high awareness of the KCOG, was not supported.

Table 25

Descriptive Statistics for the Results of the Test for H19

Awareness	Implementation Year	*M*	*SD*	*N*
High	2012	15.426	6.275	90
	2013-2015	15.286	5.465	21
Low	2012	8.875	5.346	16
	2013-2015	8.451	5.856	17
Moderate	2012	12.929	5.851	33
	2013-2015	11.956	5.308	15

RQ8. To what extent are the mean scores of the SoCQ stage categories different among subgroups of faculty who report low, moderate, or high involvement in the KCOG?

H20. The mean scores of the SoCQ self category are different among subgroups of faculty who report low, moderate, or high involvement in the KCOG.

A thirteenth two-factor ANOVA was conducted to test H20. The two categorical variables used to group the dependent variable, scores of the SoCQ self category, were involvement in the KCOG (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for involvement in the KCOG, a main effect for school type, and a two-way interaction effect (Involvement in KCOG x School Type). The main effect for involvement in the KCOG

was used to test H20. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = .593$, $df = 2, 189$, $p = .554$. The average self category rating for faculty members who reported high involvement in the KCOG (M=14.532, SD = 6.296) was not different from the average self category rating for faculty members who reported low involvement in the KCOG (M = 17.591, SD = 6.181) or moderate involvement in the KCOG (M = 16.277, SD = 4.935). A follow-up post hoc was not warranted. H20, which stated that the mean scores of the SoCQ self category are different among subgroups of faculty who report low, moderate, or high involvement in the KCOG, was not supported.

H21. The mean scores of the SoCQ task category are different among subgroups of faculty who report low, moderate, or high involvement in the KCOG.

A fourteenth two-factor ANOVA was conducted to test H21. The two categorical variables used to group the dependent variable, scores of the SoCQ task category, were involvement in the KCOG (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for involvement in the KCOG, a main effect for school type, and a two-way interaction effect (Involvement in KCOG x School Type). The main effect for involvement in the KCOG was used to test H21. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = .338$, $df = 2, 189$, $p = .714$. The average task category rating for faculty members who reported high involvement in the KCOG (M=12.386, SD = 7.038) was not different from the average task category rating for faculty members who reported low involvement in the KCOG (M = 11.709, SD = 7.079) or moderate involvement in the

KCOG (*M* = 10.915, *SD* = 5.478). A follow-up post hoc was not warranted. H21, which stated that the mean scores of the SoCQ task category are different among subgroups of faculty who report low, moderate, or high involvement in the KCOG, was not supported.

H22. The mean scores of the SoCQ impact category are different among subgroups of faculty who report low, moderate, or high involvement in the KCOG.

A fifteenth two-factor ANOVA was conducted to test H22. The two categorical variables used to group the dependent variable, scores of the SoCQ impact category, were involvement in the KCOG (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for involvement in the KCOG, a main effect for school type, and a two-way interaction effect (Involvement in KCOG x School Type). The main effect for involvement in the KCOG was used to test H22. The level of significance was set at .05. The results of the analysis indicated a statistically significant difference between at least two of the means, $F = 5.141$, $df = 2, 186$, $p = .007$. Based on the results of the Tukey HSD post hoc test one difference between means was significant. The average SoCQ impact category rating for faculty members who reported high involvement in the KCOG (*M* = 15.652, *SD* = 6.441) was higher than the average SoCQ impact category rating for faculty members who reported low involvement in the KCOG (*M* = 11.784, *SD* = 6.980). H22, which stated that the mean scores of the SoCQ impact category are different among subgroups of faculty who report low, moderate, or high involvement in the KCOG, was supported.

RQ9. To what extent does school type affect the differences in the mean scores of the SoCQ stage categories among subgroups of faculty who report low, moderate, or high involvement in the KCOG?

H23. School type affects the differences in the mean scores of the SoCQ self category among subgroups of faculty who report low, moderate, or high involvement in the KCOG.

The thirteenth two-factor ANOVA was conducted to test H23. The two categorical variables used to group the dependent variable, scores of the SoCQ self category, were involvement in the KCOG (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for involvement in the KCOG, a main effect for school type, and a two-way interaction effect (Involvement in KCOG x School Type). The interaction effect for involvement in the KCOG by school type was used to test H23. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = .819$, $df = 2, 189$, $p = .442$. See Table 26 for the means and standard deviations for this analysis. A follow-up post hoc was not warranted. H23, which stated that school type affects the differences in the mean scores of the SoCQ self category among subgroups of faculty who report low, moderate, or high involvement in the KCOG, was not supported.

Table 26

Descriptive Statistics for the Results of the Test for H23

Involvement	School Type	*M*	*SD*	*N*
High	Four-Year	16.667	7.219	3
	Two-Year	14.414	6.296	54
Low	Four-Year	17.417	6.207	32
	Two-Year	17.709	6.229	47
Moderate	Four-Year	18.467	4.442	10
	Two-Year	15.830	4.952	49

H24. School type affects the differences in the mean scores of the SoCQ task category among subgroups of faculty who report low, moderate, or high involvement in the KCOG.

The fourteenth two-factor ANOVA was conducted to test H24. The two categorical variables used to group the dependent variable, scores of the SoCQ task category, were involvement in the KCOG (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for involvement in the KCOG, a main effect for school type, and a two-way interaction effect (Involvement in KCOG x School Type). The interaction effect for involvement in the KCOG by school type was used to test H24. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = 1.338$, $df = 2, 189$, $p = .265$. See Table 27 for the means and standard deviations for this analysis. A follow-up post hoc was not warranted. H24, which stated that school type affects the differences in the

mean scores of the SoCQ task category among subgroups of faculty who report low, moderate, or high involvement in the KCOG, was not supported.

Table 27

Descriptive Statistics for the Results of the Test for H24

Involvement	School Type	*M*	*SD*	*N*
High	Four-Year	14.333	4.163	3
	Two-Year	12.278	7.173	54
Low	Four-Year	10.875	6.479	32
	Two-Year	12.277	7.474	47
Moderate	Four-Year	13.300	5.832	10
	Two-Year	10.429	5.335	49

H25. School type affects the differences in mean scores of the SoCQ impact category among subgroups of faculty who report low, moderate, or high involvement in the KCOG.

The fifteenth two-factor ANOVA was conducted to test H25. The two categorical variables used to group the dependent variable, scores of the SoCQ impact category, were involvement in the KCOG (low, moderate, high) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for involvement in the KCOG, a main effect for school type, and a two-way interaction effect (Involvement in KCOG x School Type). The interaction effect for involvement in the KCOG by school type was used to test H25. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = .167$, $df = 2, 189$, $p = .846$. See Table 28 for the

means and standard deviations for this analysis. A follow-up post hoc was not warranted. H25, which stated that school type affects the differences in mean scores of the SoCQ impact stage category among subgroups of faculty who report low, moderate, or high involvement in the KCOG, was not supported.

Table 28

Descriptive Statistics for the Results of the Test for H25

Involvement	School Type	*M*	*SD*	*N*
High	Four-Year	13.556	9.669	3
	Two-Year	15.617	6.280	54
Low	Four-Year	9.906	5.722	32
	Two-Year	12.894	7.314	47
Moderate	Four-Year	12.667	4.394	10
	Two-Year	14.211	5.066	49

RQ10. To what extent does implementation year affect the differences in the mean scores of the SoCQ stage categories among subgroups of faculty who report low, moderate, or high involvement in the KCOG?

H26. Implementation year affects the differences in the mean scores of the SoCQ self category among subgroups of faculty who report low, moderate, or high involvement in the KCOG.

A sixteenth two-factor ANOVA was conducted to test H26. The two categorical variables used to group the dependent variable, scores of the SoCQ self category, were involvement in the KCOG (low, moderate, high) and implementation year (2012, 2013, 2014). The two-factor ANOVA can be used to test three hypotheses including a main

effect for involvement in the KCOG, a main effect for school type, and a two-way interaction effect (Involvement in KCOG x Implementation Year). The interaction effect for involvement in the KCOG by implementation year was used to test H26. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = .406$, $df = 2, 186$, $p = .667$. See Table 29 for the means and standard deviations for this analysis. A follow-up post hoc was not warranted. H26, which stated that implementation year affects the differences in the mean scores of the SoCQ self category among subgroups of faculty who report low, moderate, or high involvement in KCOG, was not supported.

Table 29

Descriptive Statistics for the Results of the Test for H26

Involvement	Implementation Year	*M*	*SD*	*N*
High	2012	14.435	6.424	46
	2013-2015	14.939	6.002	11
Low	2012	17.417	6.638	48
	2013-2015	17.598	5.587	29
Moderate	2012	15.844	4.705	45
	2013-2015	18.077	5.571	13

H27. Implementation year affects the differences in the mean scores of the SoCQ task category among subgroups of faculty who report low, moderate, or high involvement in the KCOG.

A seventeenth two-factor ANOVA was conducted to test H27. The two categorical variables used to group the dependent variable, scores of the SoCQ task

category, were involvement in the KCOG (low, moderate, high) and implementation year (2012, 2013-2015). The two-factor ANOVA can be used to test three hypotheses including a main effect for involvement in the KCOG, a main effect for school type, and a two-way interaction effect (Involvement in KCOG x Implementation Year). The interaction effect for involvement in the KCOG by implementation year was used to test H27. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = .380$, $df = 2, 186$, $p = .685$. See Table 30 for the means and standard deviations for this analysis. A follow-up post hoc was not warranted. H27, which stated that implementation year affects the differences in the mean scores of the SoCQ task category among subgroups of faculty who report low, moderate, or high involvement in the KCOG, was not supported.

Table 30

Descriptive Statistics for the Results of the Test for H27

Involvement	Implementation Year	*M*	*SD*	*N*
High	2012	12.283	7.317	46
	2013-2015	12.818	6.014	11
Low	2012	12.292	7.514	48
	2013-2015	10.517	6.339	29
Moderate	2012	11.111	5.690	45
	2013-2015	10.615	4.908	13

H28. Implementation year affects the differences in mean scores of the SoCQ impact category among subgroups of faculty who report low, moderate, or high involvement in the KCOG.

An eighteenth two-factor ANOVA was conducted to test H28. The two categorical variables used to group the dependent variable, scores of the SoCQ impact category, were involvement in the KCOG (low, moderate, high) and implementation year (2012, 2013-2015). The two-factor ANOVA can be used to test three hypotheses including a main effect for involvement in the KCOG, a main effect for school type, and a two-way interaction effect (Involvement in KCOG x Implementation Year). The interaction effect for involvement in the KCOG by implementation year was used to test H28. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = .750$, $df = 2, 186$, $p = .474$. See Table 31 for the means and standard deviations for this analysis. A follow-up post hoc was not warranted. H28, which stated that implementation year affects the differences in the mean scores of the SoCQ impact category among subgroups of faculty who report low, moderate, or high involvement in the KCOG, was not supported.

Table 31

Descriptive Statistics for the Results of the Test for H28

Involvement	Implementation Year	*M*	*SD*	*N*
High	2012	15.652	6.441	46
	2013-2015	14.909	6.462	11
Low	2012	12.750	7.162	48
	2013-2015	10.184	6.206	29
Moderate	2012	13.889	5.202	45
	2013-2015	14.205	4.409	13

RQ11. To what extent are the mean scores of the SoCQ stage categories different among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution?

H29. The mean scores of the SoCQ self category are different among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution.

A nineteenth two-factor ANOVA was conducted to test H29. The two categorical variables used to group the dependent variable, scores of the SoCQ self category, were assessment method (formative, summative, mixed) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for assessment method, a main effect for school type, and a two-way interaction effect (Assessment Method x School Type). The main effect for assessment method was used to test H29. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, F =.847, df = 2, 189, p = .430. A follow-up post hoc was not warranted. The average SoCQ self category rating for faculty members who reported the use of formative assessment (M = 15.763, SD = 6.261) was not different from the average SoCQ self category rating for faculty members who reported the use of summative assessment (M = 17.093, SD = 6.610) or from the average SoCQ self category rating for faculty members who reported the use of mixed assessment (M = 16.061, SD = 5.570). H29, which stated that the mean scores of the SoCQ self category are different among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution, was not supported.

H30. The mean scores of the SoCQ task category are different among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution.

A twentieth two-factor ANOVA was conducted to test H30. The two categorical variables used to group the dependent variable, scores of the SoCQ task category, were assessment method (formative, summative, mixed) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for assessment method, a main effect for school type, and a two-way interaction effect (Assessment Method x School Type). The main effect for assessment method was used to test H30. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, F =.268, df = 2, 189, p = .765. A follow-up post hoc was not warranted. The average SoCQ task category rating for faculty members who reported the use of formative assessment (M = 12.516, SD = 7.089) was not different from the average SoCQ task category rating for faculty members who reported the use of summative assessment (M = 11.926, SD = 7.219) or from the average task category rating for faculty members who reported the use of mixed assessment (M = 11.300, SD = 6.189). H30, which stated that the mean scores of the SoCQ task category are different among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution, was not supported.

H31. The mean scores of the SoCQ impact category are different among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution.

A twenty-first two-factor ANOVA was conducted to test H31. The two categorical variables used to group the dependent variable, scores of the SoCQ impact category, were assessment method (formative, summative, mixed) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for assessment method, a main effect for school type, and a two-way interaction effect (Assessment Method x School Type). The main effect for assessment method was used to test H31. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, F =.928, df = 2, 189, p = .397. A follow-up post hoc was not warranted. The average impact category rating for faculty members who reported the use of formative assessment (M = 13.226, SD = 6.078) was not different from the average SoCQ impact category rating for faculty members who reported the use of summative assessment (M = 12.191, SD = 6.322) or from the average SoCQ impact category rating for faculty members who reported the use of mixed assessment (M = 14.197, SD = 6.416). H31, which stated that the mean scores of the SoCQ impact category are different among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution, was not supported.

RQ12. To what extent does school type affect the differences in the mean scores of the SoCQ stage categories among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution?

H32. School type affects the differences in the mean scores of the SoCQ self category among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution.

The nineteenth two-factor ANOVA was conducted to test H32. The two categorical variables used to group the dependent variable, scores of the SoCQ self category, were assessment method (formative, summative, mixed) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for assessment method, a main effect for school type, and a two-way interaction effect (Assessment Method x School Type). The interaction effect for assessment method by school type was used to test H32. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = .443$, $df = 2, 189$, $p = .643$. See Table 32 for the means and standard deviations for this analysis. A follow-up post hoc was not warranted. H32, which stated that school type affects the differences in the mean scores of the SoCQ self category among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution, was not supported.

Table 32

Descriptive Statistics for the Results of the Test for H32

Assessment Method	School Type	*M*	*SD*	*N*
Formative	Four-Year	15.222	6.047	6
	Two-Year	15.893	6.425	25
Summative	Four-Year	18.750	7.080	16
	Two-Year	16.395	6.369	38
Mixed	Four-Year	17.420	4.752	23
	Two-Year	15.701	5.738	87

H33. School type affects the differences in the mean scores of the SoCQ task category among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution.

The twentieth two-factor ANOVA was conducted to test H33. The two categorical variables used to group the dependent variable, scores of the SoCQ task category, were assessment method (formative, summative, mixed) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for assessment method, a main effect for school type, and a two-way interaction effect (Assessment Method x School Type). The interaction effect for assessment method by school type was used to test H33. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = 1.285$, $df = 2, 189$, $p = .279$. See Table 33 for the means and standard deviations for this analysis. A follow-up post hoc was not warranted. H33, which stated that school type affects the differences in the mean scores of the SoCQ task category among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution, was not supported.

Table 33

Descriptive Statistics for the Results of the Test for H33

Assessment Method	School Type	*M*	*SD*	*N*
Formative	Four-Year	9.000	5.586	6
	Two-Year	13.360	7.245	25
Summative	Four-Year	12.875	7.822	16
	Two-Year	11.526	7.020	38
Mixed	Four-Year	11.478	5.089	23
	Two-Year	11.253	6.474	87

H34. School type affects the differences in mean scores of the SoCQ impact category among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution.

The twenty-first two-factor ANOVA was conducted to test H34. The two categorical variables used to group the dependent variable, scores of the SoCQ impact category, were assessment method (formative, summative, mixed) and school type (two-year, four-year). The two-factor ANOVA can be used to test three hypotheses including a main effect for assessment method, a main effect for school type, and a two-way interaction effect (Assessment Method x School Type). The interaction effect for assessment method by school type was used to test H34. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = 1.234$, $df = 2, 189$, $p = .293$. See Table 34 for the means and standard deviations for this analysis. A follow-up post hoc was not warranted. H34, which stated that school type affects the differences in mean

scores of the SoCQ impact category among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution, was not supported.

Table 34

Descriptive Statistics for the Results of the Test for H34

Assessment Method	School Type	*M*	*SD*	*N*
Formative	Four-Year	8.000	3.633	6
	Two-Year	14.480	5.913	25
Summative	Four-Year	11.208	5.512	16
	Two-Year	12.605	6.659	38
Mixed	Four-Year	11.174	6.340	23
	Two-Year	14.996	6.230	87

RQ13. To what extent does implementation year affect the differences in the mean scores of the SoCQ stage categories among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution?

H35. Implementation year affects the differences in the mean scores of the SoCQ self category among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution.

A twenty-second two-factor ANOVA was conducted to test H35. The two categorical variables used to group the dependent variable, scores of the SoCQ self category, were assessment method (formative, summative, mixed) and implementation year (2012, 2013-2015). The two-factor ANOVA can be used to test three hypotheses including a main effect for assessment method, a main effect for school type, and a two-

way interaction effect (Assessment Method x Implementation Year). The interaction effect for assessment method by implementation year was used to test H35. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = .620$, $df = 2, 186$, $p = .539$. See Table 35 for the means and standard deviations for this analysis. A follow-up post hoc was not warranted. H35, which stated that implementation year affects the differences in the mean scores of the SoCQ self category among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution, was not supported.

Table 35

Descriptive Statistics for the Results of the Test for H35

Assessment Method	Implementation Year	*M*	*SD*	*N*
Formative	2012	15.317	6.776	20
	2013-2015	16.133	5.484	10
Summative	2012	16.260	6.794	41
	2013-2015	19.500	5.588	12
Mixed	2012	15.897	5.560	78
	2013-2015	16.591	5.706	31

H36. Implementation year affects the differences in the mean scores of the SoCQ task category among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution.

A twenty-third two-factor ANOVA was conducted to test H36. The two categorical variables used to group the dependent variable, scores of the SoCQ task category, were assessment method (formative, summative, mixed) and implementation

year (2012, 2013-2015). The two-factor ANOVA can be used to test three hypotheses including a main effect for assessment method, a main effect for school type, and a two-way interaction effect (Assessment Method x Implementation Year). The interaction effect for assessment method by implementation year was used to test H36. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = .393$, $df = 2, 186$, $p = .676$. See Table 36 for the means and standard deviations for this analysis. A follow-up post hoc was not warranted. H36, which stated that implementation year affects the differences in the mean scores of the SoCQ task category among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution, was not supported.

Table 36

Descriptive Statistics for the Results of the Test for H36

Assessment Method	Implementation Year	*M*	*SD*	*N*
Formative	2012	12.200	7.743	20
	2013-2015	12.400	5.873	10
Summative	2012	11.902	7.873	41
	2013-2015	12.167	5.024	12
Mixed	2012	11.833	6.146	78
	2013-2015	10.129	6.254	31

H37. Implementation year affects the differences in mean scores of the SoCQ impact category among subgroups of faculty who report the use of a formative, summative, or mixed method of assessment at their institution.

A twenty-fourth two-factor ANOVA was conducted to test H37. The two categorical variables used to group the dependent variable, scores of the SoCQ impact category, were assessment method (formative, summative, mixed) and implementation year (2012, 2013-2015). The two-factor ANOVA can be used to test three hypotheses including a main effect for assessment method, a main effect for school type, and a two-way interaction effect (Assessment Method x Implementation Year). The interaction effect for assessment method by implementation year was used to test H37. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = .723$, $df = 2, 186$, $p = .487$. See Table 37 for the means and standard deviations for this analysis. A follow-up post hoc was not warranted. H37, which stated that implementation year affects the differences in the mean scores of the SoCQ impact category among subgroups of faculty who report the use of a formative, summative, or mixed assessment method at their institution, was not supported.

Table 37

Descriptive Statistics for the Results of the Test for H37

Assessment Method	Implementation Year	*M*	*SD*	*N*
Formative	2012	14.250	6.496	20
	2013-2015	11.533	5.210	10
Summative	2012	12.276	6.526	41
	2013-2015	12.417	5.843	12
Mixed	2012	14.983	6.206	78
	2013-2015	12.247	6.721	31

Additional Analyses

The results of the *t* tests associated with H1 indicated that faculty members responded as "somewhat true of me now" for all stages. This consistent result caused the researcher to consider additional questions related to the data. George et al. (2006) stated that their survey offered some indication of a stage that groups of people are in. The additional analyses were used to investigate that claim and provide a more robust analysis of the data.

Additional *t* tests were conducted using the 35 individual items from the survey with each mean tested against a null value of 2. The results of the analyses indicated that 30 were statistically significant (see Appendix G). The null value represents the lowest "somewhat true of me know" response on the SoCQ. Only questions 2, 3, 4, 18, and 20 were not statistically significant, indicating that the result was likely due to chance. Question 3 is associated with the self category. Question 4 is in the task category. Questions 2, 18, and 20 are associated with the impact category.

The SEDL online software was used to identify the peak stage percentile score for each respondent. "The percentile score indicates the relative intensity of concern at each stage. The higher the score, the more intense the concerns are at that stage" (George et al., 2006, p. 32). Six respondents' results indicated a tie between two or more stages and were excluded from the additional analyses. A count was conducted for each stage by school type (two-year, four-year) and a percentage within the school type was generated. Figure 3 represents the distribution of percentages by school type. In this figure, both two- and four-year institutions have very high stage 0 scores indicating a high intensity of a lack of concern regarding the implementation of common student learning outcomes

which the authors refer to as a nonuser. Two-year institutions have a distinct "negative one-two split" in which stage 2 has a higher score than stage 1. This indicates that in this population, personal concerns outweigh the faculty member's openness to the innovation. Four year institutions have a slight "tailing up" at stage 6. This is an indication that this overall nonuser population may be resistant to the innovation. (George et al., 2006, p. 40-42).

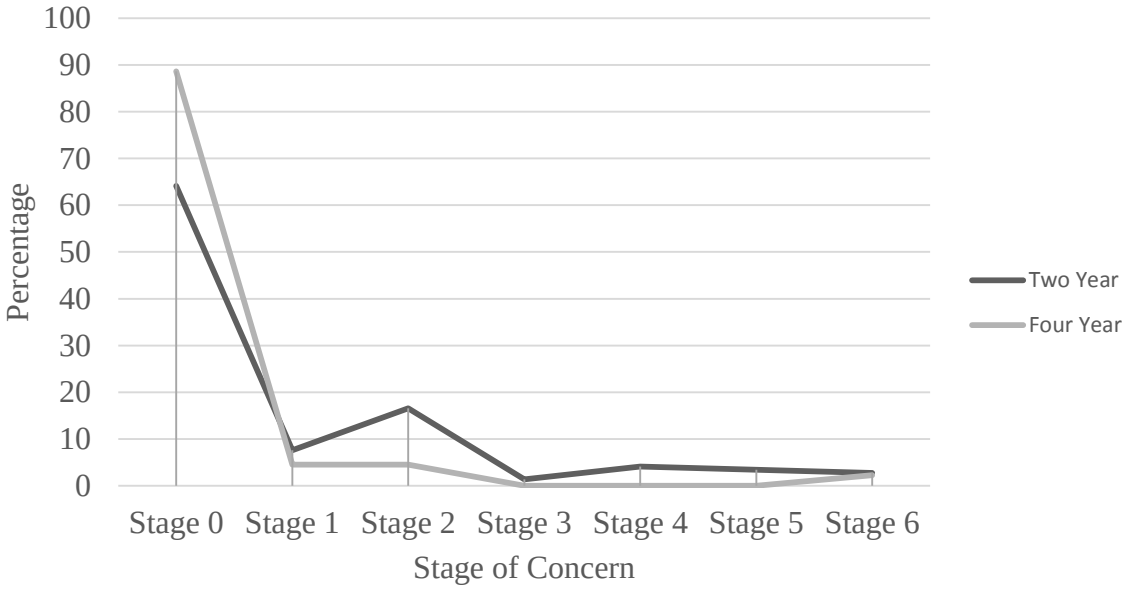

Figure 3. Percentage for the 7 Stages of Concern by School Type. The line chart in this figure represents the percentage of the sample at each percentile peak for the seven stages of concern by school type.

The researcher planned to conduct χ^2 tests for differences in proportions to learn if the self, task, or impact category assignment in the SoCQ was affected by school type or implementation years; however, the distribution of the frequencies was unequal and the χ^2 test assumption of at least $n = 5$ in each expected cell was violated. Therefore, for all the analyses, contingency data are provided. Table 38 reports the contingency data for

the self, task, and impact stages by school type. These data show the overwhelming percentage of faculty respondents are categorized into the self category based on the results of the SoCQ questionnaire.

Table 38

Contingency Table for Self, Task, and Impact Stage Categories by School Type

Stage Category	Two-Year		Four-Year	
	n	%	*n*	%
Self	128	88.28	43	97.73
Task	2	1.38	0	0.00
Impact	15	10.34	1	2.27

Contingency data for the importance of assessment is presented in Table 39. These data show the perception of the importance of assessment of student learning. Approximately 80% of faculty at two-year institutions and almost 70% of faculty members at four year institutions perceive assessment of student learning to be of high importance.

Table 39

Contingency Table for Importance of Assessment by School Type

Importance of Assessment	Two-Year		Four-Year	
	n	%	*n*	%
High	121	80.67	31	68.89
Moderate	27	18.00	13	28.89
Low	2	1.33	1	2.22

Presented in Table 40 are the results of faculty members' awareness of the KCOG by school type. Respondents at two-year institutions are more aware of the KCOG than

respondents at four-year institutions. In fact, 40% of the four year institution faculty members reported low awareness of KCOG, while only 11% of the two-year institution faculty members reported low awareness.

Table 40

Contingency Table for Awareness of KCOG by School Type

Awareness of KCOG	Two-Year		Four-Year	
	n	%	*n*	%
High	102	68.00	10	22.22
Moderate	31	20.67	17	37.78
Low	17	11.33	18	40.00

The reported level of involvement in KCOG is presented in Table 41. These results indicate the respondents from four year institutions reported a low involvement in KCOG (71.11%), whereas the respondents from two-year institutions varied in their reported level of involvement. There is a pronounced difference between school types regarding high involvement. Respondents from two-year institutions reported high involvement more frequently than respondents from four-year institutions.

Table 41

Contingency Table for Involvement in KCOG by School Type

Involvement in KCOG	Two-Year		Four-Year	
	N	%	*N*	%
High	54	36.00	3	6.67
Moderate	49	32.67	10	22.22
Low	47	31.33	32	71.11

Reported in Table 42 are the results of assessment methodology. In both school types, a mix of both summative and formative assessment is reported most frequently. Summative assessment is reported as the second most frequent method, with formative assessment the least frequent response.

Table 42

Contingency Table for Assessment Method by School Type

Assessment Method	Two-Year		Four-Year	
	N	%	*N*	%
Formative	25	16.67	6	13.33
Summative	38	25.33	16	35.56
Mixed	87	58.00	23	51.11

In addition to the analyses by school type, the researcher was interested to see if variation existed based on implementation year of the common student learning outcomes. A count was conducted for each stage by implementation year (2012, 2013-2015) and a percentage within the implementation year was generated. Figure 4 represents the distribution of percentages by implementation year. This figure also represents the highest intensity in stage 0, confirming the lack of concern regarding implementing common student learning outcomes. However, there is a more distinct parallel between the two groups in the negative one-two split (George et al., 2006). The two implementation years essentially mirror each other except for a difference in stage 6. The responses associated with implementation year 2012 have a tailing up at stage 6, while the later implementation years tail down.

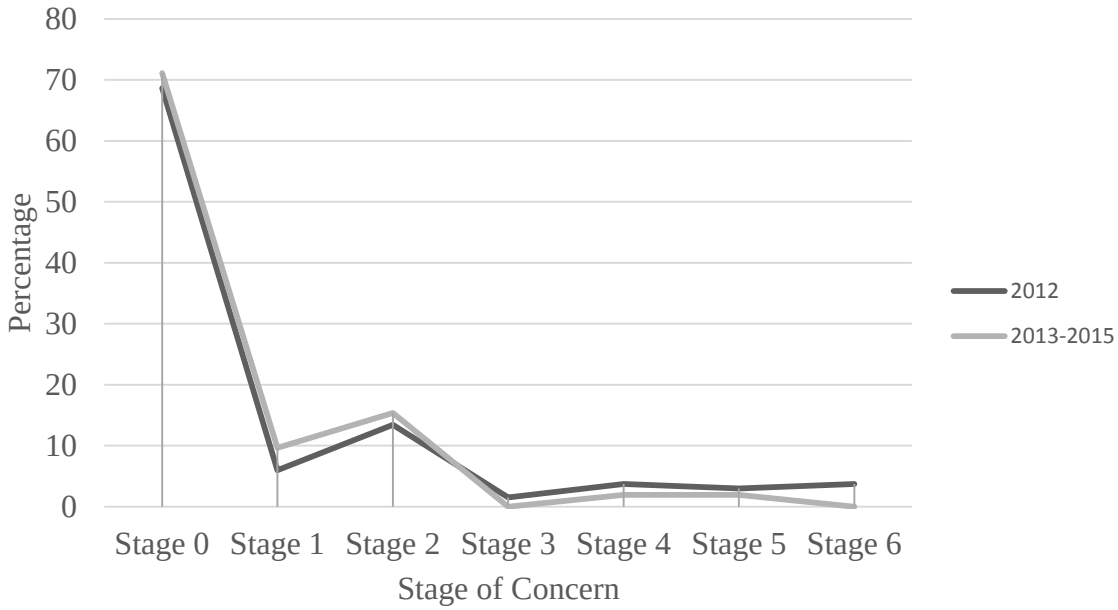

Figure 4. Percentage for the 7 Stages of Concern by Implementation Year. The line chart in this figure represents the percent for the seven stages of concern by implementation year.

With this additional analysis, the researcher planned to conduct χ^2 test for differences in proportions, however the distribution of the frequencies was unequal and the χ^2 test assumption of at least $n = 5$ in each expected cell was violated. Therefore, for all the analyses, contingency data are provided. Table 43 reports the contingency data for the self, task, and impact stages by implementation year. These data confirm the high percentage of faculty respondents who are regarded as placed into the self category based on the results of the SoCQ questionnaire.

Table 43

Contingency Table for Self, Task, and Impact Stage Categories by Implementation Year

Stage Category	2012		2013-2015	
	N	%	*N*	%
Self	118	88.06	50	94.34
Task	2	1.49	0	0.00
Impact	14	10.45	2	3.77

Reported in Table 44 are the contingency data regarding the importance of assessment by implementation year. These results confirm that most respondents perceive assessment of student learning to be of high importance. Specifically, these data show that the length of time since implementation of common student learning outcomes does not display any change to the high importance of assessment of student learning.

Table 44

Contingency Table for Importance of Assessment by Implementation Year

Importance of Assessment	2012		2013-2015	
	N	%	*N*	%
High	113	81.29	37	69.81
Moderate	23	16.55	16	30.19
Low	3	2.16	0	0.00

Presented in Table 45 are the results of faculty members' awareness of the KCOG by implementation year. Of note in these data is the most frequent response of high awareness for those respondents associated with the 2012 implementation year. Since it

has been several years, a high score was expected. High awareness is also the most frequently reported response with the later implementation years.

Table 45

Contingency Table for Awareness of KCOG by Implementation Year

Awareness of KCOG	2012		2013-2015	
	N	%	*N*	%
High	90	64.75	21	39.62
Moderate	33	23.74	15	28.30
Low	16	11.51	17	32.08

Summarized in Table 46 are the most frequent responses associated with involvement in KCOG by implementation year. Respondents associated with the 2012 reporting year have slightly higher frequencies of high and moderate involvement than those respondents associated with later implementation years. Those respondents who reported low involvement are more frequently associated with later implementation years.

Table 46

Contingency Table for Involvement in KCOG by Implementation Year

Involvement in KCOG	2012		2013-2015	
	N	%	*N*	%
High	46	33.09	11	20.75
Moderate	45	32.37	13	24.53
Low	48	34.53	29	54.72

Reported in Table 47 are the results of assessment methodology by implementation year. Like previously reported data, use of a mix of both summative and

formative assessment is reported most frequently. Summative assessment is reported as the second most frequent method, with formative assessment being the least frequent response. There is no difference between these results and the responses presented by school type.

Table 47

Contingency Table for Assessment Method by Implementation Year

Assessment Method	2012		2013-2015	
	N	%	*N*	%
Formative	20	14.39	10	18.87
Summative	41	29.50	12	22.64
Mixed	78	56.12	31	58.49

Summary

Chapter four provided the results generated through descriptive statistics and hypothesis testing for the research questions in this study. The results of additional analyses were also presented in this chapter. Chapter five provides interpretation and recommendations from the results including a study summary, an overview of the problem, a summary of the purpose statement and research questions, a review of the methodology, major findings, findings related to the literature, and conclusions that include implications for action and recommendations for future research.

Chapter Five

Interpretation and Recommendations

Higher education has been placed under great scrutiny regarding student learning. Due to that scrutiny, external stakeholders including KBOR and HLC hold higher education to high standards for assessing student learning. In addition, with KBOR's goal to provide seamless education to those students who plan to transfer credits from one public higher education institution to another (KBOR 2012), increased emphasis has been placed on student learning outcomes in general education courses. In this chapter, a study summary is provided that includes an overview of the research problem, purpose statement and research questions, and a review of the methodology, and major findings. Findings related to the literature are also provided. Lastly, conclusions are provided that include implications for action, recommendations for future research, and concluding remarks.

Study Summary

The development of common student learning outcomes in general education courses in Kansas was initiated to facilitate seamless transfer of credit from one public higher education institution to another (KBOR, 2012). This study was designed to provide insight on how faculty members at two- and four-year public institutions in Kansas have responded to this change through analysis of the interactions of six independent variables including: (a) the school type (technical college, community college, university); (b) general education course(s) taught, which was used to identify the earliest year each instructor taught a course with common student learning outcomes; (c) the importance of assessing student learning outcomes at the respondents' institution

(high, moderate, low); (d) personal awareness of the Kansas Core Outcomes Group project (high, moderate, low); (e) personal involvement with the Kansas Core Outcome Group project (high, moderate, low); and (f) the primary method of assessment of student learning at the respondent's institution (summative, formative, or mixed).

Overview of the problem. Faculty members in Kansas vary in their personal background and experience related to assessment of student learning and they may have concerns about the implementation of common learning outcomes across general education courses. No previous research has assessed how faculty members have responded to this change, their reported importance of assessment, or their awareness/involvement with the KCOG process. In addition, there has been no research on the variety of methods of assessment currently used at the public higher education institutions in Kansas.

Purpose statement and research questions. This study was designed to provide insight on how faculty members at two- and four-year public institutions in Kansas have responded to the implementation of common student learning outcomes in general education courses. Thirteen research questions were developed to analyze the interactions between the six variables addressed with this study. Specifically, differences between the self, task, and impact categories were tested for differences between (a) the school type (technical college, community college, university), (b) general education course(s) taught, which was used to identify the earliest year each instructor taught a course with common student learning outcomes, (c) the importance of assessing student learning outcomes at the respondents' institution (high, moderate, low), (d) personal awareness of the Kansas Core Outcomes Group project (high, moderate, low), (e)

personal involvement with the Kansas Core Outcome Group project (high, moderate, low), and (f) the primary method of assessment of student learning at the respondent's institution (summative, formative, or mixed).

Review of the methodology. This quantitative cross-sectional descriptive survey research study involved general education faculty members at Kansas public higher education institutions who teach one or more general education courses approved between 2012 and 2015 that transfer statewide for full credit under the Kansas Board of Regents system-wide transfer program. Descriptive statistics were used to provide frequency information. For each item on the SoCQ, respondents indicated how true that item was of them at the time of the current study. These responses were collected and used for one sample *t* tests to determine to what extent the mean was above 10 for each of the seven stages of concern (0-7) and the three stage categories (self, task, impact). A series of two-factor ANOVAs were conducted to determine if a statistically significant difference existed between the self, task, and impact ratings for each of these categories of concern among subgroups defined by the following variables: (a) the school type (technical college, community college, university), (b) general education course(s) taught, which was used to identify the earliest year each instructor taught a course with common student learning outcomes, (c) the importance of assessing student learning outcomes at the respondents' institution (high, moderate, low), (d) personal awareness of the Kansas Core Outcomes Group project (high, moderate, low), (e) personal involvement with the Kansas Core Outcome Group project (high, moderate, low), and (f) the primary method of assessment of student learning at the respondent's institution (summative, formative, or mixed).

Major findings. This study of Kansas public higher education faculty members' responses to factors related to the implementation of common student learning outcomes in general education courses exposed several statistically significant findings. Community college faculty members represented 70.77% of the respondents. Most respondents (71.28%) implemented common student learning outcomes in their general education courses in 2012. The most frequently reported response to the importance of assessment at the respondent's institution was high (77.95%). The most frequently reported response to the awareness of KCOG was also high (57.44%). The most frequently reported level of involvement in KCOG was low (40.51%). The most frequently reported assessment method was mixed (56.41%).

Of the 37 hypotheses, H1, H2, H4, H13, H14, and H22 were supported by statistically significant or marginally significant results. For each of the SoCQ categories, self, task, impact, the mean ratings indicated faculty members responded the concerns measured in each of the stages of concern categories were "somewhat true of me now." Although the result was not statistically significant, the average SoCQ self category rating for faculty members who reported that assessment of student learning is of high importance at their institution was lower than the average SoCQ self category rating for faculty members who reported that assessment is of moderate or low importance. In addition, although the result was not statistically significant, the average SoCQ impact category rating for faculty members who reported that assessment of student learning is of high importance at their institution was higher than the average SoCQ impact stage category rating for faculty members who reported assessment is of moderate or low importance. The average SoCQ impact category rating for faculty

members who reported high awareness of KCOG was higher than the SoCQ impact category rating for faculty members who reported low awareness of KCOG and faculty members who reported moderate awareness of KCOG. The average SoCQ impact category rating for faculty members who reported moderate awareness of KCOG was higher than the faculty members who reported low awareness of KCOG. Although not statistically significant, the average SoCQ self category rating for faculty members at four-year institutions who reported high and low awareness of the KCOG was higher than the average SoCQ self category rating for faculty members at four-year institutions who reported moderate awareness of the KCOG. The average SoCQ impact category rating for faculty members who reported high involvement with assessment was higher than the average SoCQ impact category rating for faculty members who reported low involvement with assessment.

Because the results of the *t* tests associated with H1 were "somewhat true of me now" for all stages, the researcher considered additional statistical analyses related to the data. Additional *t* tests were conducted using the 35 items from the survey. The results of the analyses indicated that the responses to 30 of the items were statistically significant and higher than the null value indicating participants rated the item as "somewhat true of me now" or higher. The peak stage score for each respondent was identified to complete a total count and percentage for each stage by school type. George et al. (2006) suggested that Stage 0 scores "indicate the degree of interest in the innovation at this time [and] the higher the Stage 0 score, the higher the indication that other things, innovations, or activities are of greater concern than the innovation under consideration" (p. 48). Stage 0 was the most frequent peak stage score for all faculty members, regardless of the

school type (two-year, four-year), or implementation year (2012, 2013-2015). Faculty members at four-year institutions were overwhelmingly unconcerned about the innovation, with very little distribution into Stages 1, 2, and 6. Faculty members at two-year institutions had a "negative one-two split" indicating that Stage 0 was the peak, but the Stage 2 score was higher than the Stage 1 score. This profile depicts "individuals with various degrees of doubt and potential resistance to an innovation" (p. 40). Stage 2 reflects concerns about how the innovation will impact an individual on a personal level, for example, job security. "An individual with this kind of profile probably will not be able to consider a proposed innovation objectively until his or her personal Stage 2 concerns are reduced" (p. 41). Peak stage data displayed by implementation year also resulted in a typical nonuser negative one-two split profile, therefore regardless of when the common student learning outcomes were approved for the course, faculty members were unconcerned and skeptical of the innovation (George et al., 2006).

Findings Related to the Literature

The results of this study elicited findings related to multiple aspects of the literature reviewed. Findings that support or do not support literature associated with accreditation, accountability, and assessment, faculty perceptions and involvement, and formative and summative assessment were identified. The following sections summarize the literature and findings.

Accreditation, Accountability and Assessment. Several authors have noted that if assessment is linked to accountability, faculty members were less likely to become involved (Baker, 1999; Cross, 1999; Steadman, 1998). Farkas (2013) suggested some faculty may feel their autonomy is threatened or that data collected from their classes and

syllabi will be used for negative purposes. The results of this study supported these suggestions in two ways. First, the item on the SoCQ survey with the highest average response, indicating "very true of me now" stated "I would like to know who will make decisions in the new system." Also, based on the profile of "nonuser, negative one-two split" (George et al., 2006, p. 40) that, a level of skepticism with the implementation of common student learning outcomes was clear among faculty at public higher education institutions in Kansas, regardless of the implementation year of the common student learning outcomes in the general education course.

Nunley et al. (2011) suggested the "assessment agenda in community colleges is more externally driven than it is in the four year sector" (p. 8). When looking at the peak stage percentage by school type, the profile of faculty members at two-year institutions clearly showed the presence of skepticism related to the implementation of common student learning outcomes more so than the profile for faculty members at four year institutions.

Faculty Perceptions/Involvement. One of the noted challenges in the literature associated with student learning outcomes assessment has been a perceived lack of time to complete the assessment activity (Bahous & Nabhani, 2015; Dove, 2008, Gold et al., 2011). Two questions on the SoCQ were related to the challenge of time. Question 4 stated "I am concerned about not having enough time to organize myself each day (in relation to KS common core student learning outcomes)". The average response was 2.23 which indicated "somewhat true of me now." Question 34 stated, "Coordination of tasks and people (in relation to KS common core student learning outcomes) is taking too much of my time." The average response to this question was 1.67 which indicated "not

true of me now." Therefore, the current study demonstrated limited faculty support for a lack of time for assessment activities.

Another challenge noted in the literature was the potential for faculty members to have difficulty in quantifying and reporting assessment results (Dove, 2008). This study supported this concept. The average faculty response to question 16 on the SoCQ "I am concerned about my inability to manage all that KS common core student learning outcomes requires" was "somewhat true of me now" and was statistically significant in the additional analysis using a one sample *t* test.

Formative and Summative Assessment. The literature associated with formative and summative assessment practices suggested varied purposes for assessments (Bloxham & Boyd, 2007; Brown et al., 1997). Other authors (Heywood 2000, Knight & Yorke, 2003; Taras 2005; Yorke 2007) described how assessments can be designed to be formative, summative, or both. The most frequent response to the question of assessment method in this study was "mixed" regardless of school type or implementation year; therefore, the current study supported use of assessment for both formative and summative practices.

Conclusions

This quantitative cross-sectional descriptive survey provided insight on how faculty members in Kansas have responded to the implementation of common student learning outcomes in general education courses. Based on the results of the responses to the SoCQ survey, faculty members showed a nonuser profile which indicated that overall the respondents were either not aware or were unconcerned with the innovation of implementing common student learning outcomes in general education courses. Faculty

members who were not aware or were unconcerned about the implementation of common student learning outcomes (categorized in the self stage of the SoCQ) showed a low or moderate importance for assessment and a low awareness of the KCOG process. Faculty members who were engaged in the implementation of common student learning outcomes (categorized in the impact stage of the SoCQ) indicated a high importance for assessment, high awareness of the KCOG process, and high involvement with the KCOG process.

The descriptive statistics associated with this study revealed discrepancies worth noting. A review of frequency of awareness of KCOG by school type revealed a difference between the two-year institutions and the four-year institutions. Fifty-eight percent of technical college faculty members and 69% of community college faculty members reported a high awareness of the KCOG process. Only 22% of university faculty members reported a high awareness. Forty percent of university faculty reported a low awareness of the KCOG process. The irregular distribution of responses is surprising as there had been annual opportunities to be involved with KCOG since 2012. More importantly, 71% percent of university faculty reported a low involvement with the KCOG process, whereas the frequency distribution was relatively consistent between high, moderate, and low for technical and community college faculty members.

A possible explanation for these differences is assessment of student learning continues to be the number one reason for HLC institutional citations for areas needing improvement. In a recent presentation at the annual conference of the HLC, Johnson (2017) indicated core component 4B on assessment and improvement continues to be the most cited core component with 31.5% of the institutions reviewed in 2015-2016 cited

for not meeting the commission's expectations. The emphasis placed on assessment of student learning in community colleges may be a direct result of these accreditation issues. When accreditation is on the line, often the entire college community works toward correcting any problems cited. There may be a difference associated with the size of an institution as well. Many technical and community colleges have a smaller population of faculty, therefore it may be easier to disseminate information throughout the group

Implications for action. Since 2012, an annual KCOG process associated with the implementation of common student learning outcomes has been available to faculty members at public higher education institutions in Kansas. These activities are discipline-based and encourage discussion and action regarding course content in general education courses. Even though the results of this study indicated there is a perception among the faculty members that assessment of student learning is of high importance, there are discrepancies associated with the same faculty members' awareness and involvement in the KCOG annual activities. Colleges and universities should place increased emphasis on development of faculty members regarding assessment of student learning. In addition, Chief Academic Officers of Kansas public higher education institutions should encourage faculty member engagement in the KCOG processes to facilitate institutional responses to demands from external stakeholders regarding assessment.

Recommendations for future research. The results of this study provided insight regarding how faculty members at two- and four-year public institutions in Kansas have responded to the implementation of common student learning outcomes in

general education courses. However, future research is necessary to comprehensively address variables associated with adoption of common student learning outcomes in general education. Research by Strollo (2011), Dove (2008), and Lederman (2008) indicated a difference in the perceptions and acceptance of assessment of student learning activities based on the faculty member's discipline or field of study categorized as liberal arts or applied science. The researcher in the current study did not classify respondents into these categories based on the course or courses identified as teaching areas in the SoCQ questionnaire. More research is necessary to identify differences in assessment of common student learning outcomes in general education courses classified as liberal arts or applied science.

The implementation of common student learning outcomes in general education courses in Kansas was part of an initiative to support seamless transfer of credit from one institution to another across public higher education institutions. Future research should focus on whether all public higher education institutions in Kansas accept identified transfer courses through this process. An analysis of credit transfer from the two-year sector to the four-year sector, and within each sector could provide further evidence to support the addition of new courses to the list of those identified for system wide transfer and to develop common student learning outcomes to facilitate transfer. In addition, if course credit transfer is successful for the general education curriculum in Kansas, there may be a need to analyze the various upper level programs duplicated at multiple public higher education institutions to facilitate transferability at that level.

Additional research is also needed to investigate the differences between two-year and four-year institutions. Assessment is a critical issue in the two-year sector of higher

education that results in not meeting expectations of accrediting bodies (Head & Johnson, 2011; Nunley et al., 2011). It is important to distinguish any differences between the two-year and four-year sectors related to assessment and accreditation. Additional research could empirically identify the presence of any biases related to institution affiliation (e.g. two-year versus four-year) in the peer review process of higher education accreditation.

Lastly, George, et al. (2006) indicated, "Hypothetically, as individuals move from nonuse and scant awareness of an innovation to beginning use and, eventually, more highly sophisticated use, their concerns move through the defined stages" (p. 37). Therefore, further research could provide evidence of this evolution of the perceptions of faculty members over time. Also, surveying the population included in this study in the future could be used to help understand and manage the implementation of common learning outcomes over time.

Concluding remarks. Higher education institutions are being held accountable for student learning. While many stakeholders have attempted to identify methods for reporting measures of student learning (e.g., scorecards, dashboards, performance goals), faculty members in the classroom are really the only entity who can assess student learning. It is admirable that Kansas has initiated the implementation of common student learning outcomes in general education courses through the KCOG process. However, even after several years of assessment initiatives, the results of this study indicated not all faculty members from all institutions were aware of or concerned about these processes. Since the answer to the question 'Are students learning?' relies so heavily on faculty members, assessment of student learning at higher education institutions should be

clearly articulated by those in leadership roles (Chief Academic Officers, Deans, Assessment Directors, etc.). The integration of assessment practices throughout the curriculum at all levels and in all programs is needed.

References

Bahous, R., & Nabhani, M. (2015). Faculty views on developing and assessing learning outcomes at the tertiary level. *The Journal of General Education*, *64*(4), 294-309. doi:https:10.1353/jge.2015.0026

Baker, R. (1999). *Assessment faculty guide: The rationale and process for outcomes assessment*. Unpublished manuscript, St. Louis Community College, St. Louis, MO.

Banta, T. W. (1999). *Assessment update: The first ten years*. Boulder, CO: National Center for Higher Education Management Systems.

Banta, T. W. (2007). Can assessment for accountability complement assessment for improvement? *Peer Review*, *9*(2), 9-12. (Accession No. 25975835)

Banta, T. W., Kinzie, J. & Palomba, C. A. (2015). *Assessment essentials: Planning, implementing, and improving assessment in higher education.* (2nd Ed). San Francisco, CA: Jossey-Bass.

Banta, T. W., & Pike, G. R. (2007). Revisiting the blind alley of value added. *Assessment Update*, *19*(1), 1-5. (Accession No. 25793637)

Biggs, J. B. (1987). *Student approaches to learning and studying*. Melbourne, AU: Australian Council for Educational Research.

Biggs, J. B. (1999). *Teaching for quality learning at university*. Buckingham, England: Society for Research in Higher Education/Open University Press.

Black, P., Harrison, C., Lee, C., Marshall, B., & Wiliam, D. (2003). *Assessment for learning: Putting it into practice*. Maidenhead, U.K.: Open University Press.

Black, P., & Wiliam, D. (1998). Assessment and classroom learning. *Assessment in education: Principles, policy & practice, 5*(1), p. 7-75. Retrieved from https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=0ahUKEwiX5rCy5J_UAhUqjlQKHd0ICHsQFgg0MAE&url=http%3A%2F%2Farea.fc.ul.pt%2Fartigos%2520publicados%2520internacionais%2FAssessment%2520and%2520classroom%2520learning.doc&usg=AFQjCNF-oUKbNMfLk2swB73aRGelVE_PIg

Bloom, B. S., Englehart, M. D., Furst, E. J., Hill, W., & Krathwohl, D. (1956). *Taxonomy of educational objectives*. New York, NY: McKay.

Bloxham, S., & Boyd, P. (2007). *Developing effective assessment in higher education: A practical guide*. Retrieved from https://www.researchgate.net/profile/Pete_Boyd2/publication/263088354_Developing_Effective_Assessment_in_Higher_Education_a_practical_guide/links/5496ec160cf20f487d316395.pdf

Bok, D. (2006). *Our underachieving colleges: A candid look at how much students learn and why they should be learning more*. Princeton, NJ: Princeton University Press.

Boud, D. (2000). Sustainable assessment: Rethinking assessment for the learning society. *Studies in Continuing Education, 22*(2), 151-167. doi:10.1080/01580379950177314

Brown, G., Bull, J., & Pendlebury, M. (1997). Assessing student learning in higher education. Retrieved from https://books.google.com/books?id=TS1TAQAAQBAJ&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false

Bruner, J. S. (1966). *Toward a theory of instruction*. Cambridge, MA; Harvard University Press.

Cabrera, A. F., Colbeck, C. L., & Terenzini, P. T. (2001). Developing performance indicators for assessing classroom teaching practices and student learning: The case of engineering. *Research in Higher Education, 42*(3), 327-352. (Accession No. 7422623)

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches.* Thousand Oaks, CA: Sage Publications.

Crisp, G. T. (2012). Integrative assessment: Reframing assessment practice for current and future learning. *Assessment & Evaluation in Higher Education, 37*(1), 33-43. doi:10.1080/02602938.2010.494234

Cross, P. K. (1999). Assessment to improve college instruction. In S. J. Messick, S. J. (Ed.), *Assessment in Higher Education: Issues of Access, Quality, Student Development, and Public Policy* (pp.35-45). New York, NY: Routledge.

Cooper, T., & Terrell, T. (2013). What are institutions spending on assessment? Is it worth the cost? (Occasional Paper No. 18). Retrieved from National Institute for Learning Outcomes Assessment website: http://learningoutcomesassessment.org/OccasionalPapereighteen.html

Daniel, J., Kanwar, A., & Uvalic-Trumbic, S. (2009). Breaking education's iron triangle: Access, cost, and quality. *Change, 41*(2), 30-35. (Accession No. 36984687)

Dove, C. A. (2008). *Understanding the adoption of student learning outcomes assessment: A case study of community college faculty* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3347520)

Deuben, R. M. (2015). Faculty attitudes toward assessment (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 10043064)

Dwyer, C. A., Millett, C. M., & Payne, D. G. (2006). *A culture of evidence: Postsecondary assessment and learning outcomes* (ETS Report). Retrieved from http://files.eric.ed.gov/fulltext/ED500004.pdf

Eaton, J. S. (2013, June). It's time to speak out: accreditation, its critics and its future. Inside Accreditation with the President of CHEA, 9(4). Retrieved from http://www.chea.org/4DCGI/cms/review.html?Action=CMS_Document&DocID=256&MenuKey=mainno

Eaton, J. S. (2015). *An overview of U.S. accreditation*. Retrieved from the Council for Higher Education Accreditation website: http://www.chea.org/userfiles/uploads/Overview%20of%20US%20Accreditation%202015.pdf

Erisman, W., & Gao, L. (2006). *Making accountability work: Community colleges and statewide higher education accountability systems* (IHEP Report). Retrieved from http://www.ihep.org/sites/default/files/uploads/docs/pubs/makingaccountabilityw ork.pdf

Evans, E. L. (2010). *Experiences of higher education faculty engaged in undergraduate student learning outcomes assessment* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3441983)

Ewell, P. T. (1985). *Levers for change: The role of state government in improving the quality of postsecondary education*. Boulder, CO: National Center for Higher Education Management Systems.

Ewell, P. T. (2009). *Assessment, accountability, and improvement: Revisiting the tension*. (Occasional Paper No. 1). Retrieved from National Institute for Learning Outcomes Assessment website: http://www.learningoutcomeassessment.org /occasionalpaperone.htm

Ewell, P. T., Finney, J. E., & Lenth, C. (1990). Filling in the Mosaic: The emerging pattern of state-based assessment. In C. R. Paulson (Eds.), *State initiatives in assessment and outcome measurement: Tools for teaching and learning in the 1990s: Individual state profiles* (ECS Working Papers, pp. 1-4). Denver, CO: Education Commission of the States.

Ewell, P. T., & Wellman, J. (2007*). Enhancing student success in education: Summary report of the NPEC initiative and national symposium on postsecondary student success.* Retrieved from https://nces.ed.gov/npec/pdf/Ewell_Report.pdf

Farkas, M. (2013). Building and sustaining a culture of assessment best practices for change leadership. *Reference Services Review*, *41*(1), 13-31. doi:10.1108/00907321311300857

Fry, H., Ketteridge, S., & Marshall, S. (2009). *A handbook for teaching and learning in higher education: Enhancing academic practice* (3rd ed.). New York, NY: Routledge.

Gaff, J. G., Pruitt-Logan, A. S., Sims, L. B., & Denecke, D. D. (2003). *Preparing future faculty in the humanities and social sciences: A guide for change.* Retrieved from http://www.preparing-faculty.org/PFFWeb.PFF4Manual.pdf

Gallagher, R. E., & Smith, D.U. (1989). Formulation of teaching/learning objectives useful for the development and assessment of lessons, courses, and programs. *Journal of Cancer Education, 4*(4), 231-234. doi: https://doi.org/10.1080/08858198909528016

George A. A., Hall, G. E., & Stiegelbauer, S. M. (2006). *Measuring implementation in schools: The stages of concern questionnaire*. Austin, TX: Southwest Educational Development Laboratory.

Gibbs, G. (2006). Why assessment is changing. In C. Bryan, & K. Clegg (Eds.), *Innovative assessment in higher education*. (pp. 11-22). London, England: Routledge.

Gold, L., Rhoades, G., Smith, M., & Kuh, G. (2011). *What faculty unions say about student learning outcomes assessment.* (Occasional Paper No.9). Retrieved from the National Institute for Learning Outcomes Assessment website: http://www.learningoutcomeassessment.org/occasionalpapernine.htm

Gray, P. J. (1997). Viewing assessment as an innovation: Leadership and the change process. *New Directions for Higher Education*. *1997*(100), 5-11. (Accession No. 375807)

Gray, M. J., & Grace, J. D. (1997). *Enhancing the quality and use of student outcomes data: Final report of the national postsecondary education cooperative working group on student outcomes from a data perspective*. Retrieved from ERIC online at http://files.eric.ed.gov/fulltext/ED412290.pdf

Hall, G. E., George, A. A., & Rutherford, W. L. (1977). *Measuring stages of concern about the innovation: A manual for use of the SoC questionnaire*. Retrieved from ERIC database. (ED147342)

Hall, G. E., Newlove, B. W., George, A. A., Rutherford, W. L., & Hord, S. M. (1991). *Measuring change facilitator Stages of Concern: A manual for use of the CFSoC questionnaire*. Greeley, CO: University of Northern Colorado, Center for Research on Teaching and Learning.

Head, R. B., & Johnson, M. S. (2011). Accreditation and its influence on institutional effectiveness. In R. B. Head (Ed.), Institutional effectiveness. *New Directions for Community Colleges*, 2011(153), 37-52. doi:10.1002/cc.435

Hernandez, R. (2012). Does continuous assessment in higher education support student learning? *Higher Education*, 64(4), 489-502. doi:10.1007/s10734-012-9506-7

Heywood, J. (2000). *Assessment in higher education*. London, England: Jessica Kingsley. Retrieved from https://books.google.com/books?hl=en&lr=&id=4bn83L0gURQC&oi=fnd&pg=PA7&dq=Assessment+in+higher+education+heywood&ots=SUZzTsqjwp&sig=N-VJz0BLs0EhPzfhKiPcCg_M-sw#v=onepage&q=Assessment%20in%20higher%20education%20heywood&f=false

Higher Learning Commission. (2012). *The new criteria for accreditation*. Retrieved from http://www.ncahlc.org/Information-for-Institutions/criteria-and-core-components.html

Higher Learning Commission. (2016). *Determining qualified faculty through HLC's criteria for accreditation and assumed practices*. Retrieved from http://download.hlcommission.org/FacultyGuidelines_2016_OPB.pdf

Huba, M. E., & Freed, J. E. (2000). *Learner-centered assessment on college campuses: Shifting the focus from teaching to learning*. Needham Heights, MA: Allyn & Bacon.

Johnson, B. J. (2017, April). *Key insights: A review of core components and the comprehensive evaluation*. Session presented at the meeting of the Higher Learning Commission, Chicago, IL.

Kansas Board of Regents. (n.d.-a). *Kansas core outcome groups*. Retrieved from http://www.kansasregents.org/academic_affairs/transfer_articulation/kansas_core_outcome_groups

Kansas Board of Regents. (n.d.-b). *Transfer and articulation*. Retrieved from http://kansasregents.org/transfer_articulation

Kansas Board of Regents. (n.d.-c) *Systemwide reverse transfer procedure*. Retrieved from ttp://www.kansasregents.org/resources/PDF/Academic_Affairs/TAAC/KBOR_Reverse_Transfer_Procedure_FINAL.pdf

Kansas Board of Regents. (n.d.-d). *Kansas degree stats*. Retrieved from http://www.ksdegreestats.org/program_search.jsp

Kansas Board of Regents. (2012). *Transfer and articulation policy*. Retrieved from KBOR website: http://kansasregents.org/resources/PDF/2326-TransferandArticulationPolicy.pdf

Kansas Board of Regents. (2014). *Performance agreements: Funding guidelines*. Retrieved from https://www.kansasregents.org/resources/PDF/2441-revisedfundingguidelinesJune182014.pdf

Kennedy, D., Hyland, A., & Ryan, N. (2009). Writing and using learning outcomes: A practical guide. *Journal of the European Higher Education Area Bologna-Archive.* Retrieved from http://pdfstori.com/56159+ implementing-bologna-in-your-institution-c-3-4-1-using-learning-outcomes-and-competences-planning-and-implementing-key-bologna-features-bh-1-02-06-121

Knight, P. T. (2002). Summative assessment in higher education: Practices in disarray. *Studies in Higher Education, 27*(3), 275-286. doi:10.1080/03075070220000662

Knight, P. T., & Yorke, M. (2003). *Assessment, learning and employability*. Retrieved from https://books.google.com/books?id=mQQgMgGtdmwC&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false

Krzykowski, L., & Kinser, K. (2014). Transparency in student learning assessment: Can accreditation standards make a difference? *Change, 46*(3), 67-73. doi:10.1080/00091383.2014.905428

Kulic, J., & Kulic, C. L. (1979). College teaching. In P. Peterson & H. Walberg (Eds.), *Research on teaching: Concepts, findings and implications* (pp. 70-93). Berkley, CA: McCutcheon.

Lederman, D. (2008, December 4). You can't measure what we teach. *Inside Higher Ed*. Retrieved from https://www.insidehighered.com/news/2008/12/04/humanities

Lunenburg, F. C., & Irby, B. J. (2008). *Writing a successful thesis or dissertation: Tips and strategies for students in the social and behavioral sciences*. Thousand Oaks, CA: Corwin Press.

Mager, R. (1975). *Preparing instructional objectives* (2nd ed.). Belmont, CA: Fearon-Pitman Publishers.

Marton, F. (1976). What does it take to learn? Some implications of an alternative view of learning. In N. Entwistle (Ed.), *Strategies for research and development in higher education* (pp. 32–42). Amsterdam, Switzlerland: Swets and Zeitlinger.

National Commission on Excellence in Education. (1983). *A nation at risk: The imperative for educational reform*. Retrieved from https://www2.ed.gov/pubs/NatAtRisk/risk.html

National Conference of State Legislatures. (2015). *Performance-based funding for higher education*. Retrieved from http://www.ncsl.org/research/education/performance-funding.aspx dated 7/31/2015

National Education Association. (2014). *Assessment of student learning*. In NEA resolutions (p.33). Washington, DC: Author. Retrieved from https://www.nea.org/assets/docs/nea-resolutions-2013-14.pdf

Nettles, M. T., Cole, J. K., & Sharp, S. (1997). *Assessment of teaching and learning in higher education and public accountability*. Stanford, CA: National Center for Postsecondary Improvement.

Nicol, D. J., & Macfarlane-Dick, D. (2006). Formative assessment and self-regulated learning: A model and seven principles of good feedback practice. *Studies in Higher Education*, *31*(2), 199-218. doi:10.1080/03075070600572090

Nunley, C., Bers, T., & Manning, T. (2011). *Learning outcomes assessment in community colleges*. (Occasional Paper No. 10). Retrieved from the National Institute for Learning Outcomes Assessment website: http://www.learningoutcomeassessment.org/documents/OccasionalPaperTen.pdf

Palomba, C. A., & Banta, T. W. (1999). *Assessment essentials: Planning, implementing, and improving assessment in higher education*. San Francisco, CA: Jossey-Bass.

Peterson, M. W., & Augustine, C. H. (2000). External and internal influences on institutional approaches to student assessment: accountability or improvement? *Research in Higher Education, 41*(4), 443-479. (Accession No. 3509682)

Peterson, M. W., Dill, D. D., & Mets, L. A. (Eds.). (1997). *Planning and management for a changing environment*. San Franscisco, CA: Jossey-Bass.

Piaget, J. (1950). *The psychology of intelligence*. London, England: Routledge.

Popham, W. J. (1971). Probing the validity of arguments against behavioral goals. In M.B. Kapfer (Ed.), *Behavioral objectives in curriculum development: Selected reading and bibliography* (pp. 390-399). Englewood Cliffs, NJ: Educational Technology Publications.

Praslova, L. (2013). Assessment leadership from the trenches: Facilitating the move from "grudging compliance" to "creative ownership". *Assessment Update, 25*(6), 10-13. doi:10.1002/au

Provezis, S. (2010). *Regional accreditation and student learning outcomes: Mapping the territory* (Occasional Paper No. 6). Retrieved from the National Institute for Learning Outcomes Assessment website: http://www.learningoutcomeassessment.org/occasionalpapersix.htm

Ramsden, P. (1988). Studying learning: Improving teaching. In P. Ramsden (Ed.), *Improving learning: New perspectives*. London, England: Kogan Page.

Robinson, T. E., & Hope, W. C. (2013). *Teaching in higher education: Is there a need for training in pedagogy in graduate degree programs?* Research in Higher Education Journal, *21*. Retrieved from http://files.eric.ed.gov/fulltext/EJ1064657.pdf

Robles, H. J. (1999, November). *The learning college – an oxymoron?* Paper presented at Community College League of California. Burlingame, CA. (ED437100)

Roksa, J., & Arum, R. (2011). The state of undergraduate learning. *Change*, *43*(2), 35-38. doi:10.1080/00091383.2011.556992

Sadler, D. R. (1989). Formative assessment and the design of instructional systems. *Instructional Science*, *18*, 119-144. doi: 10.1007/BF00117714

Schacter, J., & Thum, Y. M. (2004). Paying for high and low quality teaching. *Economics of Education Review*, *23*, 411-430. doi:10.1016/j.econedurev.2003.08.002

Shavelson, R. J. (2007). Assessing student learning responsibility: From history to an audacious proposal. *Change*, *39*(1), 26-33. (Accession No. 23714023)

Shulman, L. S. (2007). Counting and recounting: Assessment and the quest for accountability. *Change*, *39*(1), 20-25. (Accession No. 23714022)

Spellings, M. (2006). *A test of leadership: Final report of the secretary's commission on the future of higher education.* Washington, D.C.: U.S. Department of Education.

Steadman, M. (1998). Using classroom assessment to change both teaching and learning. *New Directions for Teaching & Learning*, *75*, 23-35. (Accession No. 9178820)

Stencil, D. (2014). *Perceptions of faculty and college leaders on the assessment practices of a mid-western technical college* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3685342)

Strollo, T. M. (2011). *Faculty and administrator beliefs regarding assessment of student learning outcomes: A community college case study* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3496932)

Taras, M. (2005). Assessment - summative and formative – some theoretical reflections. *British Journal of Educational Studies, 53*(4), 466-478. doi:10.1111/j.1467-8527.2005.00307.x

Terenzini, P. T. (2010). Assessment with open eyes: Pitfalls in studying student outcomes. *New Directions for Institutional Research*. doi:10.1002/ir.329

Troutt, W. E. (1978). *The quality assurance function of regional accreditation* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 7909957)

U.S. Department of Education. (n.d.). *College scorecard data.* Retrieved from https://collegescorecard.ed.gov/data/documentation/

U.S. Department of Education. (2006). *A test of leadership: Charting the future of U.S. higher education*. Washington, DC: U.S. Department of Education.

Warren, J. (1984). The blind alley of value added. *AAHE Bulletin, 37*(1), 10-13.

Williams, J. L. (2013). *Faculty engagement with learning outcomes assessment: a study of public two-year colleges in Colorado* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3597989)

Yorke, M. (2007, May). *Assessment, especially in the first year of higher education: Old principles in new wrapping?* Paper presented at the meeting of REAP International Online Conference on Assessment Design for Learner Responsibility, Glasgow, Scotland.

Zis, S., Boeke, M., & Ewell, P. (2010). *State policies on the assessment of student learning outcomes: Results of a fifty-state inventory*. Retrieved from http://www.nchems.org/c2sp/documents/C2SPStateAssessment_Final_6.21.2010.pdf

Appendices

Appendix A: Permission from SEDL

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To: Sarah Robb (Licensee)
Coordinator of Assessment and Biological Science Instructor
Neosho County Community College
800 W 14th
Chanute, KS 66720

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Information Associate
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Date: April 8, 2015

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Thank you, again, for your interest in using the ***Stages of Concern Questionnaire*** (SoCQ 075). If you have any questions about this License Agreement, please contact me at 800-476-6861, ext. 6548 or 512-391-6548, or by e-mail at nancy.reynolds@sedl.org.

Sincerely,

Nancy Reynolds — April 8, 2015

Nancy Reynolds for SEDL, an Affiliate of American Institutes for Research — Date signed

Agreed and accepted:

Signature: Sarah R Robb — 4/8/15

Date signed

Printed Name: Sarah R. Robb

Appendix B: Customized SoCQ Questionnaire

SEDL ADVANCING RESEARCH, IMPROVING EDUCATION

Stages of Concern Questionnaire

About the Stages of Concern Questionnaire

The purpose of this questionnaire is to determine what people are thinking about when using various programs or practices. It is intended to assess their levels of concerns at various times during the adoption process.

The items were developed from typical responses of school and college teachers who ranged from no knowledge at all about various programs to many years' experience using them. Therefore, **many of the items on this questionnaire may appear to be of little relevance or irrelevant to you at this time.** For the completely irrelevant items, please select "0" on the scale. Other items will represent those concerns you do have, in varying degrees of intensity, and should be marked higher on the scale.

For example:

The fictional survey items below demonstrate how responses might be filled in by a person who loves to eat pizza but does not like pepperoni. The person has never left the United States before, and the person does not enjoy eating the same meal two days in a row. In this case, the concern being asked about is "EATING PIZZA" and is highlighted in each question.

	Irrelevant	Not true of me now	Somewhat true of me now			Very true of me now		
	0	1	2	3	4	5	6	7
I enjoy Eating Pizza.	○	○	○	○	○	○	○	◉
I enjoy Eating Pizza four or five days per week.	○	○	○	○	◉	○	○	○
I enjoy Eating Pizza with pepperoni.	○	◉	○	○	○	○	○	○
I have enjoyed Eating Pizza when traveling to foreign countries.	◉	○	○	○	○	○	○	○

Please click the button below to start the questionnaire.

Continue to the questionnaire

SoCQ 075

Stages of Concern Questionnaire

Please answer the following 6 items:

Institution Type:

select an option from this list ▼

General Education Course Taught: (select all that apply)

- ☐ Acting I
- ☐ Acting II
- ☐ American Government
- ☐ Anatomy and Physiology
- ☐ Art Appreciation
- ☐ Art History I
- ☐ Art History II
- ☐ Calculus I
- ☐ Chemistry I and Lab for Majors
- ☐ Chemistry II and Lab for Majors
- ☐ Childhood Growth & Devel.
- ☐ College Algebra
- ☐ Descriptive Astronomy & Lab
- ☐ Descriptive Astronomy Lab
- ☐ Descriptive Astronomy
- ☐ Elementary Statistics
- ☐ English Composition I
- ☐ English Composition II
- ☐ Ethics
- ☐ French I
- ☐ French II
- ☐ Gen. Biology and Lab for Non-majors
- ☐ Human Lifespan/ Devel. Psych.
- ☐ International Relations
- ☐ Interpersonal Communication
- ☐ Intro. to Computers and Apps.
- ☐ Intro. to Cultural Anthropology
- ☐ Intro. to Ling. Anthropology
- ☐ Intro. to Philosophy
- ☐ Intro. to Political Science
- ☐ Introduction to Drawing
- ☐ Introduction to Literature
- ☐ Introduction to Psychology
- ☐ Introduction to Sociology
- ☐ Logic & Critical Thinking
- ☐ Macroeconomics
- ☐ Microeconomics
- ☐ Music Appreciation
- ☐ Music Theory I

- ☐ Nutrition
- ☐ Physical Science I and Lab
- ☐ Physics I and Lab
- ☐ Physics II and Lab
- ☐ Public Speaking
- ☐ Social Problems
- ☐ Spanish I
- ☐ Spanish II
- ☐ Spanish III
- ☐ Stagecraft
- ☐ Theatre Appreciation
- ☐ Theatre Practicum
- ☐ Trigonometry
- ☐ US History since 1877
- ☐ US History to 1877
- ☐ World History 1500 to Present
- ☐ World History To 1500
- ☐ World Regional Geography
- ☐ World Religions

The importance of assessing student learning outcomes at your institution is:

select an option from this list ▼

Your personal awareness of the Kansas Core Outcomes Group Project is:

select an option from this list ▼

Your personal involvement in the Kansas Core Outcomes Group Project is:

select an option from this list ▼

The primary method of assessment of student learning outcomes at your institution is:

- ○ Summative (happens after the semester is over)
- ○ Formative (happens during the semester)
- ○ Mixed (both during and after the semester)

Select one response for each question below.

Please respond to the items in terms of **your present concerns**, or how you feel about your involvement with **KS Common Core Student Learning Outcomes**. We do not hold to any one definition of the innovation so please think of it in terms of your own perception of what it involves. Phrases such as "this approach" and "the new system" all refer to the same innovation. Remember to respond to each item in terms of your present concerns about your involvement or potential involvement with the innovation.

		Irrel-evant	Not true of me now	Somewhat true of me now			Very true of me now		
#		0	1	2	3	4	5	6	7
1.	**I am concerned about students' attitudes toward KS Common Core Student**	○	○	○	○	○	○	○	○

	Learning Outcomes.								
2.	I now know of some other approaches that might work better than KS Common Core Student Learning Outcomes.	○	○	○	○	○	○	○	○
3.	I am more concerned about another innovation.	○	○	○	○	○	○	○	○
4.	I am concerned about not having enough time to organize myself each day (in relation to KS Common Core Student Learning Outcomes).	○	○	○	○	○	○	○	○
5.	I would like to help other faculty in their use of KS Common Core Student Learning Outcomes.	○	○	○	○	○	○	○	○
6.	I have a very limited knowledge about KS Common Core Student Learning Outcomes.	○	○	○	○	○	○	○	○
7.	I would like to know the effect of reorganization on my professional status.	○	○	○	○	○	○	○	○
		Irrel-evant	Not true of me now	Somewhat true of me now			Very true of me now		
#		0	1	2	3	4	5	6	7
8.	I am concerned about conflict between my interests and my responsibilities.	○	○	○	○	○	○	○	○
9.	I am concerned about revising my use of KS Common Core Student Learning Outcomes.	○	○	○	○	○	○	○	○
10.	I would like to develop working relationships with both our faculty and outside faculty using KS Common Core Student Learning Outcomes.	○	○	○	○	○	○	○	○
11.	I am concerned about how KS Common Core Student Learning Outcomes affects students.	○	○	○	○	○	○	○	○
12.	I am not concerned about KS Common Core Student Learning Outcomes at this time.	○	○	○	○	○	○	○	○
13.	I would like to know who will make the decisions in the new system.	○	○	○	○	○	○	○	○
14.	I would like to discuss the possibility of using KS Common Core Student Learning Outcomes.	○	○	○	○	○	○	○	○
		Irrel-evant	Not true of me now	Somewhat true of me now			Very true of me now		
#		0	1	2	3	4	5	6	7

15.	I would like to know what resources are available if we decide to adopt KS Common Core Student Learning Outcomes.	○	○	○	○	○	○	○	○
16.	I am concerned about my inability to manage all that KS Common Core Student Learning Outcomes requires.	○	○	○	○	○	○	○	○
17.	I would like to know how my teaching or administration is supposed to change.	○	○	○	○	○	○	○	○
18.	I would like to familiarize other departments or persons with the progress of this new approach.	○	○	○	○	○	○	○	○
19.	I am concerned about evaluating my impact on students (in relation to KS Common Core Student Learning Outcomes).	○	○	○	○	○	○	○	○
20.	I would like to revise the KS Common Core Student Learning Outcomes approach.	○	○	○	○	○	○	○	○
21.	I am completely occupied with things other than KS Common Core Student Learning Outcomes.	○	○	○	○	○	○	○	○
		Irrel-evant	Not true of me now	Somewhat true of me now			Very true of me now		
#		0	1	2	3	4	5	6	7
22.	I would like to modify our use of KS Common Core Student Learning Outcomes based on the experiences of our students.	○	○	○	○	○	○	○	○
23.	I spend little time thinking about KS Common Core Student Learning Outcomes.	○	○	○	○	○	○	○	○
24.	I would like to excite my students about their part in this approach.	○	○	○	○	○	○	○	○
25.	I am concerned about time spent working with nonacademic problems related to KS Common Core Student Learning Outcomes.	○	○	○	○	○	○	○	○
26.	I would like to know what the use of KS Common Core Student Learning Outcomes will require in the immediate future.	○	○	○	○	○	○	○	○
27.	I would like to coordinate my efforts with others to maximize the effects of KS Common Core Student Learning Outcomes.	○	○	○	○	○	○	○	○
28.	I would like to have more information on time and energy commitments required by KS Common Core Student Learning Outcomes.	○	○	○	○	○	○	○	○

		Irrel-evant	Not true of me now	Somewhat true of me now			Very true of me now		
#		0	1	2	3	4	5	6	7
29.	I would like to know what other faculty are doing in this area.	○	○	○	○	○	○	○	○
30.	Currently, other priorities prevent me from focusing my time on KS Common Core Student Learning Outcomes.	○	○	○	○	○	○	○	○
31.	I would like to determine how to supplement, enhance, or replace KS Common Core Student Learning Outcomes.	○	○	○	○	○	○	○	○
32.	I would like to use feedback from students to change the program.	○	○	○	○	○	○	○	○
33.	I would like to know how my role will change when I am using KS Common Core Student Learning Outcomes.	○	○	○	○	○	○	○	○
34.	Coordination of tasks and people (in relation to KS Common Core Student Learning Outcomes) is taking too much of my time.	○	○	○	○	○	○	○	○
35.	I would like to know how KS Common Core Student Learning Outcomes is better than what we have now.	○	○	○	○	○	○	○	○

Thank you for completing this survey!

Submit Survey Responses

 SoCQ 075

Appendix C: Baker University IRB Original Approval

Baker University Institutional Review Board

May 22, 2015

Dear Sarah Robb,

The Baker University IRB has reviewed your research project application and approved this project under Exempt Status Review. As described, the project complies with all the requirements and policies established by the University for protection of human subjects in research. Unless renewed, approval lapses one year after approval date.

Please be aware of the following:

1. Any significant change in the research protocol as described should be reviewed by this Committee prior to altering the project.
2. Notify the IRB about any new investigators not named in original application.
3. When signed consent documents are required, the primary investigator must retain the signed consent documents of the research activity.
4. If this is a funded project, keep a copy of this approval letter with your proposal/grant file.
5. If the results of the research are used to prepare papers for publication or oral presentation at professional conferences, manuscripts or abstracts are requested for IRB as part of the project record.

Please inform this Committee or myself when this project is terminated or completed. As noted above, you must also provide IRB with an annual status report and receive approval for maintaining your status. If you have any questions, please contact me at CTodden@BakerU.edu or 785.594.8440.

Sincerely,

Chris Todden EdD
Chair, Baker University IRB

Baker University IRB Committee
Sara Crump PhD
Erin Morris PhD
Scott Crenshaw

Appendix D: Baker University IRB Renewal

Baker University Institutional Review Board

November 16, 2016

Dear Sarah Robb and Susan Rogers:

The Baker University IRB has reviewed your research project renewal application and approved this project under Expedited Status Review. As described, the project complies with all the requirements and policies established by the University for protection of human subjects in research. Unless renewed, approval lapses one year after approval date.

Please be aware of the following:

1. Any significant change in the research protocol as described should be reviewed by this Committee prior to altering the project.
2. Notify the IRB about any new investigators not named in original application.
3. When signed consent documents are required, the primary investigator must retain the signed consent documents of the research activity.
4. If this is a funded project, keep a copy of this approval letter with your proposal/grant file.
5. If the results of the research are used to prepare papers for publication or oral presentation at professional conferences, manuscripts or abstracts are requested for IRB as part of the project record.

Please inform this Committee or myself when this project is terminated or completed. As noted above, you must also provide IRB with an annual status report and receive approval for maintaining your status. If you have any questions, please contact me at EMorris@BakerU.edu or 785.594.7881.

Sincerely,

Erin R. Morris

Erin Morris PhD
Chair, Baker University IRB

Baker University IRB Committee
Joe Watson
Nate Poell MA
Susan Rogers PhD
Scott Crenshaw

Appendix E: Email Solicitation Scripts

Invitation Email

Dear colleague,

I am currently a doctoral student at Baker University completing my dissertation on the establishment of common student learning outcomes for general education college courses in Kansas. You have been identified as a faculty member at a higher education institution in Kansas that may have taught, are teaching, or plan to teach one of the general education courses associated with this process. I am inviting you to participate in a brief and anonymous questionnaire related to this topic.

The purpose of the questionnaire is to determine what people are concerned about at various times during the process of adopting an innovation. The survey is called the Stages of Concern Questionnaire, and it will take approximately 10 minutes to complete

Completion of this questionnaire is voluntary and by clicking the link below, you provide consent for your responses to be used in my study.

> The survey is available online at: https://www.sedl.org/concerns/
>
> Enter the password: **4ss2um** to log on.

Thank you,
Sarah Robb
Ed.D. Candidate, Baker University

Reminder Email 1

Dear Colleague,

Recently you were invited to participate in a brief and anonymous questionnaire related to the topic of common student learning outcomes for general education college courses in Kansas.

If you have already completed the questionnaire, THANK YOU! I am sorry I don't have a way to eliminate you from the email list, as the survey is anonymous. Your contribution to my study is greatly appreciated!

If you haven't already completed the questionnaire, please consider taking approximately 10 minutes to complete the questionnaire and help a dissertation student reach the desired response rate established by her committee.

Thank you for your consideration. Completion of this questionnaire is voluntary and by clicking the link below, you provide consent for your responses to be used in my study.

> The survey is available online at: https://www.sedl.org/concerns/

Enter the password: **4ss2um** to log on.

Sarah Robb
Ed.D. Candidate, Baker University

Reminder Email 3 – Last Request

Dear Colleague,

This will be my last email - I promise! Thank you so much for those of you who have completed the questionnaire, your contribution is very much appreciated.

If you haven't already completed the questionnaire, ***please*** consider taking approximately 10 minutes to complete the questionnaire and help a dissertation student reach the desired response rate established by her committee.

Thank you for your consideration. Completion of this questionnaire is voluntary and by clicking the link below, you provide consent for your responses to be used in my study.

The survey is available online at: https://www.sedl.org/concerns/

Enter the password: **4ss2um** to log on.

I plan to close the survey on Friday, 3/10/2017.

Sarah Robb
Ed.D. Candidate, Baker University

Appendix F: Course Frequencies

Course Title	*n*
Acting I	7
Acting II	7
American Government	10
Anatomy & Physiology	8
Art Appreciation	6
Art History I	6
Art History II	3
Calculus I	16
Chemistry I & Lab	11
Chemistry II & Lab for Majors	9
Childhood Growth & Development	8
College Algebra	26
Composition I	25
Composition II	23
Descriptive Astronomy	3
Developmental Psychology	11
Elementary Statistics	11
Ethics	10
French I	4
French II	2
General Biology & Lab	18
International Relations	2
Interpersonal Communication	6
Intro to Computers & Applications	10
Intro to Cultural Anthropology	5
Intro to Drawing	3
Intro to Linguistic Anthropology	0
Intro to Literature	12

Course Title	*n*
Intro to Philosophy	9
Intro to Political Science	5
Intro to Psychology	14
Intro to Sociology	10
Logic and Critical Thinking	6
Macroeconomics	12
Microeconomics	12
Music Appreciation	10
Music Theory I	8
Nutrition	6
Physical Science I & Lab	15
Physics I & Lab	14
Physics II & Lab	14
Public Speaking	16
Social Problems	5
Spanish I	7
Spanish II	7
Spanish III	6
Stagecraft	9
Theatre Appreciation	10
Theatre Practicum	7
Trigonometry	12
US History since 1877	20
US History to 1877	18
World History 1500 to Present	12
World History to 1500	11
World Regional Geography	12
World Religions	4

Appendix G: Additional Analysis of 35 SoCQ Items

SoCQ Item	*M*	*SD*	*t*
q1	2.71	2.06	4.806*
q2	1.98	1.70	-0.168
q3	2.22	1.89	1.591
q4	2.24	1.91	1.721
q5	2.28	1.88	2.055*
q6	2.62	2.14	4.046*
q7	3.09	2.28	6.677*
q8	2.52	1.77	4.077*
q9	2.04	1.65	0.304*
q10	3.07	1.95	7.679*
q11	3.77	2.03	12.177*
q12	2.82	2.25	5.091*
q13	4.44	2.17	15.655*
q14	2.49	1.88	3.626*
q15	3.42	2.27	8.748*
q16	2.42	1.98	2.972*
q17	3.55	2.15	10.107*
q18	2.22	1.73	1.785
q19	2.89	1.94	6.371*
q20	1.88	1.70	-0.967
q21	3.55	2.28	9.499*
q22	2.62	1.89	4.543*
q23	3.71	2.26	10.599*
q24	2.59	1.93	4.277*
q25	2.84	2.17	5.410*
q26	3.76	2.17	11.294*
q27	2.90	1.87	6.704*
q28	3.06	2.11	7.019*
q29	3.84	2.02	12.707*
q30	3.54	2.28	9.436*
q31	2.71	1.97	5.018*
q32	2.98	2.03	6.753*
q33	3.11	2.22	6.973*
q34	1.65	1.48	-3.293*
q35	3.51	2.41	8.758*

*p < .05