

ACADEMIC QUALITY IMPROVEMENT PROGRAM (AQIP): A PEER REVIEWER'S PERSPECTIVE

Dr. Douglas Franklin
Assistant Dean (Emeriti), Planning, Assessment & Research
Office of Student Affairs
OHIO University

Abstract

The Higher Learning Commission is an accrediting commission of the North Central Association of Colleges and Schools, one of six regional accrediting agencies in the United States. The Academic Quality Improvement Program (AQIP) is an alternative to the traditional accreditation process and integrates the principles and processes of continuous improvement into the culture of colleges and universities. AQIP is grounded in the concept that systematic improvement is gained by using achievable action projects. Presented from the experience of a seasoned peer reviewer, the paper seeks inform readers of the AQIP process, identify Higher Learning Commission Criteria and AQIP Categories, and explore the principles of high performing organizations. The results of impromptu study of twenty-one AQIP projects found institutions often would benefit from establishing a more collaborative environment, engage in market research and assessment when developing and implementing projects, and utilize relevant research and professional standards as part of institutional quality assurance processes.

INTRODUCTION

“Accreditation is the primary means by which colleges, universities and programs assure quality to students and the public” (Eaton, 2012, p.4). The one hundred year old accreditation process relies on self-reflection and external review by peers to ensure quality assurance and improvement. Self-reflection is commonly done extensively through self-study and peer review processes that can take many forms dependent upon the accrediting agency. The purpose of this paper is to describe the peer review process associated with Action Projects identified within the Higher Learning Commission’s Academic Quality Improvement Program (AQIP).

Accreditation and the Higher Learning Commission

In addition to fifty-two (52) state and territorial boards of higher education and the U.S. Department of Education, regional accrediting agencies in the United States are one leg of a Triad tasked with ensuring quality in higher education institutions. The federal leg of the Triad is the United States Department of Education (DOE). The DOE is responsible for oversight and compliance of the accreditation process, ensuring the viability of the accrediting agencies. In short, the DOE accredits the accrediting agencies. State governments are responsible for the establishing policies, licensing institutions and providing funding for institutions within their respective states. The accrediting agencies

ensure quality assurance through the establishment of standards and criteria on which institutions are measured and assessed. In addition to the development and renewal of standards, accrediting agencies establish accreditation processes that include institutional reflection through a self-report, peer review and analysis, and an agency verification upon analysis of the institution's self report and peer review. The process can take anywhere from one to two years and is repeated every 7 to 10 years depending upon the accrediting agency's regulations (Higher Learning Commission, 2013¹)

Located in Chicago, Illinois, the Higher Learning Commission is the higher education wing of the North Central Association of Colleges and Schools (NCA). The Higher Learning Commission is the largest of the six regional agencies in the United States, accrediting higher education institutions in eighteen states, primarily located in the central region of the country and has over thirteen hundred institutional members, all of which are responsible for providing human resources, known as peers, to support for the accreditation process.

Academic Quality Improvement Program (AQIP)

The Academic Quality Improvement Program (AQIP) is an alternative accreditation process of the Higher Learning Commission (HLC). Unlike the Commission's Standard Pathway and Open Pathway, the AQIP Pathway requires a review of a panel of peer institutions to be admitted to the program (Higher Learning Commission, 2013). The AQIP accreditation program, originally developed in 1999-2000, integrates the principles and processes of continuous quality improvement into the culture of colleges and universities. The AQIP process is grounded in the concept of systematic improvement and relies on a systems thinking approach to quality improvement. In addition to periodic systems appraisals and quality check-up visit by peer reviewers, AQIP institutions participate in focused action projects and strategy forums throughout the seven-year review period (Higher Learning Commission, 2008).

AQIP institutions are required to conduct a regular and ongoing cycle of Action Projects that reflect the institution's record for quality improvement activities. AQIP Action Projects are central to institutional success because they demand that the institution develop the constructs and processes required to organize and oversee regular quality initiatives. The Action Project process broadly engages faculty and staff in the selection of projects and also through participation on project teams. Unlike drawn-out processes associated with strategic planning, AQIP Action Projects guarantees the institution completes several short-term quality assurance projects (Higher Learning commission, 2013³)

AQIP Action Projects are guided by two primary sets of guidelines, AQIP Categories and the Higher Learning Commission's Principles of *High Performance Organizations* (Higher Learning Commission, 2010). All AQIP projects fall within nine categories, which are used to compartmentalize action projects including:

- AQIP Category One: Helping Students Learn;
- AQIP Category Two: Accomplishing Other Distinctive Objectives;
- AQIP Category Three: Understanding Students and Other Stakeholder Needs;

- AQIP Category Four: Valuing People;
- AQIP Category Five: Leading and Communicating;
- AQIP Category Six: Supporting Institutional Operations;
- AQIP Category Seven: Measuring Effectiveness;
- AQIP Category Eight: Planning for Continuous Improvement;
- AQIP Category Nine: Building Collaborative Relationships.

There are ten philosophies that form the *Principles of High Performance Organizations* (Higher Learning Commission, 2010) and that undergird the AQIP categories. These include:

- Focus: Mission, vision and purpose focus institutional efforts;
- Involvement: Broad-based and inclusive engagement of faculty, staff, and students;
- Leadership: The development of quality culture utilizing effective communication through leadership and leadership systems;
- Learning: Creating a learning-centered institution focused on seeking effective ways to engage students and enhance the learning environment;
- People: Respect through investments in individuals;
- Collaboration: Working together for achievement of a common mission;
- Agility: Flexibility and responsiveness to changing needs and conditions;
- Foresight: Focused on planning and future thinking;
- Information: Fact-based information gathering, analyzing and using;
- Integrity: Responsible institutional citizenship that models values.

Systems Thinking

A distinguishing characteristic of the AQIP process is the focus on systems and processes. In his ground breaking book *The Fifth Discipline: The Art and Practice of the Learning Organization* (2006; 1990) Peter Senge identifies systems thinking, personal mastery, mental models, building shared vision and team learning as essential elements of the learning organization. Senge further emphasizes that systems thinking is the "cornerstone of the learning organization" (Senge, 2006; 1990). The concept (of systems thinking) views a system as an adaptive whole, which can survive as its environment may change and deliver shocks to it. In such a whole, each functional part will be properly linked to others and appropriate information will be continuously available to enable adaptation to take place in response to the monitoring of performance (Checkland, 2012, p.466). As Aristotle offered "the whole is greater than the sum of its parts." Checkland suggests that in order for a system to be adaptive the units must be considered a part of overall system that is made up functional sub-systems. System adaptability requires processes of communication, control procedures to manage the change; and methods to address "emergent properties that characterize the evolving system (Checkering, 2012, p. 466).

Peer Review

Peer Review is a primary element in the advance of all professional fields in the United States Using peer experts to serve as reviewers has been a long-standing tradition in academic culture of the United states (Association of Specialized and Professional Accreditors, 2013). "Peer review in accreditation is based on the fundamental assumption that quality in higher education is best served through a process that enables peers of the

organization, informed by standards created and applied by professionals in higher education, to make the judgments essential to assuring and advancing the quality of higher learning (Higher Learning Commission, 2013¹). Peers judge institutional quality based on respective institutional missions. Review of quality is collegial, primarily qualitative, formative, and focused on improvement (Eaton, J. 2012).

AQIP project reviewers are selected based on their experience and interest. Application is done online during selected times of the year and reviewed by Higher Learning Commission professional staff. Upon selection, AQIP project reviewers are assigned to a peer mentor who will provide training about expectations and the review process. Training is conducted annual before each project review cycle. AQIP project reviewers are evaluated based on projects reviewed.

AQIP Project Review Process

Process Goals infuse the principles and benefits of continuous improvement into the culture of colleges and universities, and assure and advance the quality of higher education. Action Projects make a serious and visible difference to institutional performance, embody challenging but attainable goals and are designed to stretch the institution in new ways to learn and excel. Institutions are to focus on both efficiency and benefits to students and other stakeholders. Action project charters consist of: project title; context statement that aligns the project with the institution; problem or opportunity to be addressed; key stakeholders involved or impacted; vision and objectives; project sponsor; scope; budget and timeline; constraints and assumptions; critical success factors and risks; and approach and organization (Higher Learning Commission, 2008).

Depending upon the stage and age of the project to be reviewed, action projects will have one or more updates. Each update will describe: past accomplishments and current status; how the institution involved people; anticipated next steps; any "effective practices" that should be shared; and what challenges the institution still faces in implementing the project.

AQIP project reviewers are expected to adopt a review philosophy conducive developing a positive and trusting relationship with each institution (Higher Learning Commission, 2010²). Overall the reviewer is exhorted to accentuate the positive by adopting a "glass is half-full attitude" rather than half-empty. Reviewers should highlight and praise things an institution is doing right and trust the institution to have good intentions and motivation, be competent, capable and ultimately do what they set out to do. While maintaining this positive attitude is deemed important, project reviewers should recognize what is important and beneficial, have high expectations, be able to redirect misdirected and wrong efforts and hold the institutions accountable.

In writing the review, project reviewers are tasked to evaluate progress in action projects and identify major accomplishments and best practices that warrant recognition. Recommendations should be specific and when possible, supported by research or useful professional standards and guidelines as well as other helpful resources. An overarching statement should be made to summarize the project's progress.

METHODOLOGY

The intent of the AQIP update project reviews used in this study was to provide constructive feedback to institutions based on the reviewer's knowledge skills and experience. The peer reviewer approached these reviews without the intention of collecting data for this study. Research findings from these reviews were unintentional, that is, research was not the original intent of the project review. No approvals were sought from any institution research board (IRB). To ensure confidentiality and anonymity the names of the institutions reviewed have been removed and only the institution's type was used in the analysis.

The process of project review is similar for all subject institutions. The reviewer is allotted 10 days to review the AQIP project, assess and make an overall judgment of the institution's progress, provide analysis of the projects status, and make targeted recommendations for improvement. The average time spent on a each project review ranged from three to four hours. All reports were uploaded into an automated system and reviewed by the reviewers mentor supervisor before being published for the institution viewing. The review was blind and reviewer signed the mandatory *Confirmation of Objectivity Form*. Final reviews were to be at least 500 words but should not exceed 1000 words. All reviews complied with these requirements. The final reviews were the key documents examined for this study.

Data used in this research came from twenty-one Higher Learning Commission member community colleges located in the states of Ohio, Michigan, Indiana, and Arkansas and were generated and collected in groups of seven, per year, during three years from 2011, 2012, and 2013 for a total of 21 projects. Analysis of the data was accomplished using the qualitative inquiry method of document analysis, which focuses on in-depth studies of fairly small samples, even single cases (n=1) selected intentionally (Patton, 2002). A systematic procedure for appraising or assessing records, document analysis includes printed and electronic material (Bowen, 2009). Examination of data from these documents is used to produce meaning, gain understanding, and develop knowledge (Corbin & Strauss, 2008). Documents examined in this review included project charters and updates. In selected cases institutional websites were used to clarify information.

Data were disaggregated from the reports by topic and entered into an Excel spreadsheet. While excel spreadsheet is not a true database (Db pros 2013; Allen, 2013), the software has a data sort function sufficient to identify common and similar elements. As documents were reviewed for the defined purpose of supporting institutions quality improvement efforts, several interesting patterns emerged which led to the development of a research questions: *to what extent do selected community colleges engage in collaborative practices in addressing Academic Quality Improvement Program projects* and *to what extent do selected community colleges utilize research and professional standards to support Academic Quality Improvement Program projects*. In order to answer these questions, consultant recommendations for each project were reviewed and analyzed with the intent of developing themes and patterns.

FINDINGS

AQIP action projects from twenty-one (n=21) Higher Learning Commission member community colleges were reviewed over a three-year period from 2011 to 2013. The largest number, n=17, and greatest percentage 80.95% of institutions were seen as making reasonable progress toward project goals. One institution made excellent progress and three colleges, 14.2%, completed projects. Institutions with completed cases were advised to use their projects as a springboard to future projects.

Findings relative to project focus tended to group into two major categories: Academic and Academic Support, n=13 (61.9%); and Other Operational processes, n=8 (38.1%). Projects are noted in Table 1: Projects and Processes Reviewed.

Table 1: Projects and Processes Reviewed (continued on next page)

Academic and Academic Support	Other Operational
Create an online Degree Audit Program (DAP)	Create a web page to describe institution's quality program and align with institutional strategic plan
Develop roadmap for students from first contact to graduation	Quantify current partnerships and resources to maintain them Student Success
Academic and Academic Support	Other Operational
System of tracking students in the enrollment process	Use data to enhance student satisfaction
Develop and implement a standardized procedure for advising students	Investigate assessment software
Expanding career exploration learning resources and early interventions	Surge Green Challenge
Develop, implement, and sustain a continuously improving student orientation program	Benchmark with peers
Develop a prior learning assessment program	One Card System
Develop a 21st century learning experience First Year Experience (FYE)	Master Planning
Assess general education program	
Initiating learning communities	
Evaluate advising process	
Student Success	

Projects were organized using the AQIP categories prescribed in the AQIP project guide. Categories and the number and percentage of projects within each AQIP category are located in Table 2: Project Categories.

Table 2: Project Categories

AQIP Category	Number and Percentage of Projects N=23*
Understanding student's and other stakeholder needs	n=8; 35%
Valuing people	n=2;9%
Leading and communicating	n=0
Supporting institutional operations	n=6;26%
Planning for continuous improvement	n=0
Building collaborative relationships	n=1;4%
Measuring effectiveness	n=0
Helping students learn	n=4;17%
Accomplishing other distinctive objectives	n=0

* Two projects identified valuing people and helping students learn as related categories resulting in n=23

Themes that emerged from the document analysis clustered around nine areas. Collaboration, including limited or inconsistent communication or not engaging with groups that could or should be involved in the project was the most common recommendation, occurring in sixteen (n=16) of the projects. The need for more marketing activity including evaluation, assessment and feedback occurred in twelve projects (n=12). There was limited use of research and/or professional standards that would have benefited eleven (n=11) projects. Focusing on students and stakeholders was recommended in nine (n=9) projects. There were seven projects Recommendations that were limited in scope and that could not be clustered

Table 3: Peer Reviewer Consultative Suggestions

AQIP Category	Number and Percentage of Projects N=23*
Collaboration (communication & engagement)	n=16; 76.9%
Marketing, Evaluation, & Feedback	n=12; 57.14%
Research & Professional Standards	n=11; 53.38%
Focus on Students and Stakeholders	n=9; 42.86%
KPIs and Outcome Measures	n=6; 28.57%
Design or Visualizing Process	n=5; 23.81%
Professional Development and Training	n=3; 14.29%
Involve Institutional Leadership	n=3; 14.29%
Specific Recommendation	n=7; 33.33%

DISCUSSION

The use of AQIP project reviews was helpful in gaining some insight to operational efficiency and effectiveness of institutions reviewed. In general these institutions embraced the AQIP process and made acceptable progress toward project goals. Viewing these projects in an aggregated way did not provide a definitive view of the overall quality of American mid-western community colleges but did provide some insight as to how the institutions worked and some areas to consider for focused improvement. The three recommendations most often made focus on collaboration, marketing and use of research and professional standards

Collaboration, including communication and engagement was recommended in a large majority of the reviews. Collaboration recommendations usually arose from projects that were developed and led by small groups of people within the institution. Many of these projects were planned as broad reaching efforts but implemented with a limited scope. Often faculty and students were not included in the planning or implementation phase and were often informed about the project rather than actively involved.

The next largest group of comments was focused on marketing, evaluation and feedback. The term marketing is presented in the broadest of terms and suggests that institutions often miss opportunities to identify client and stakeholder needs. Too often, AQIP projects had a defined process that was not grounded in institutional reality that ultimately limited the impacted of the project. The use market research to understand the institution and the effected clientele, to determine appropriate courses of action through the use of the collected data, and to assess the project's progress was missing in many AQIP projects.

Research and professional standards were identified as possible shortcomings in slightly more than 50% of the projects. The study of American higher education is common in the United States and scholars produce both theoretical and practical studies that are useful in operating institutions of higher education. There are several institutions in the United States that focus specifically on American Community Colleges that would be valuable resources. There are also a plethora of associations that provide professional standards for most academic, academic support, and co-curricular functional areas of an institution. Standards from these organizations were recommended on numerous occasions.

The focus on students and other stakeholders had similar issues as those articulated with collaboration. Many of the student-focused projects did not include students in the planning or implementation phases, and did not provide opportunities to develop student-learning outcomes. Students were often seen as reactors rather than proactive engagers. Project activities were often projected onto the students rather than having students engaged in the development process. Similarly, the involvement of stakeholders was often limited to those specifically mentioned in the project's charter. Projects were often specifically designed for a target audience and other potential stakeholders were omitted from considered partners.

Many of the projects were focused on inputs and processes and did not address possible outcomes or provide key performance indicators of success. Do to pubic awareness of and political engagement with institutional accountability, the focus of American accreditation has moved away from inputs and processes to output and results. Outcomes, measured by key performance indicators, are used to determine organizational effectiveness and continuous quality improvement.

The recommendation of implementing a design and visualizing process occurred when institutions engaged in overly complex processes that would be benefitted by better organization or by some type of visual representation of the process. Concept maps, flowcharts, and dashboards were recommended to serve as tools to support project clarity.

A few projects developed to be implemented by faculty, staff and students did not accommodate for sufficient and necessary education and training. In these cases, professional development for faculty and staff, and supplemental instruction for students, to clarify their role and function, were recommended.

In rare cases, especially when the project had stalled or was not moving forward at the desired rate of progress, recommendations were made to involve institutional leadership. In many of these cases, it was unclear whether institutional leadership, beyond the assistant vice president or director level, had formally supported the project.

Recommendations focused specifically on the project occurred in one-third of the reviews and were outside the scope of this study. These recommendations were aggregated and eliminated from the data analysis.

CONCLUSIONS AND RECOMMENDATIONS

The three most common recommendations made during the review process involved collaboration, marketing, and use of research and professional standards. These project review recommendations were refined to develop overall recommendations to facilitate and support quality assurance efforts of community colleges.

The first recommendation is for institutions to consider engaging partners in a collaborative and synergistic way by involving a variety of constituents (faculty, departments, students etc.) in all stages of their AQIP action projects. The old saying “two heads are better than one” attributed to Aristotle, provides the foundation for this recommendation. In studying the synergistic effect of collaboration on information seeking, Shah and Gonzalez-Ibanez (2010) concluded, “working in collaboration, achieved something greater and better than what could be achieved by adding independent users, thus, demonstrates...a synergic effect” (p. 1). In her literature review of collaborative research Bukvova (2010) identifies access to expertise, resources, exchange of ideas, pooling expertise for addressing complex problems, keeping focus, learning new skills, achieving high productivity, producing high quality results, prestige, political and personal factors and fun pleasure. Concerns about collaborative research included tensions caused by determining who should get credit for the research and determining final responsibility and accountability for the outputs (Bukvova (2010).

The next recommendation is to start AQIP projects with the end in mind. In, *Seven Habits of Highly Effective People, Powerful Lessons for Personal Change*, Covey (1989) makes the case that growth can be gained by envisioning what the person wants to achieve. This second habit, Begin With the End in Mind is a key concept for both personal and organizational mission, vision and purpose statements.

Organizational complexity necessitates working together to establish a clear vision of what is to be accomplished. Conducting market research, by engaging stakeholders, developing goals with measurable outcomes, and assessing results, is made possible by establishing a clear vision of what is to be achieved and beginning the journey with the end in mind.

Finally, the study of higher education and the development of standards by professional associations and consortiums focused on the creation of guidelines has provided institutional management in higher education with the tools to operate using good or best practices. One such organization focusing on standards for higher education is the Council for the Advancement of Standards in Higher Education-CAS (2013). A consortium of forty professional associations representing nearly every academic support and co-curricular functional area, CAS develops and revises standards and provides tools used in the self-assessment process. Organizations focused on the study of American community colleges include the American Association of Community Colleges (2013), The Council for the Study of Community Colleges (2013) and the Center for the Study of Community Colleges (2013). Several institutions of higher education have research centers focused on the study of American community colleges. These include: Community College Research Center at Columbia University (2013), the Bill J. Priest Center for Community Colleges at the University of North Texas (2013), the Center for the Study of Higher Education at the University of Memphis (2013), and the Center for Community College Student Engagement (CCCSE) at the University of Texas (2013). The aforementioned center conducts a nation wide survey of community college students and recently published *A Matter of Degrees: Promising Practices for Community College Student Success* (2012), a useful tool for institutions undertaking continuous quality improvement efforts.

This study emerged from the reviews of twenty-one community colleges that are members of the Higher Learning Commission using the Academic Quality Improvement Program as a form of accreditation. While not planned, the research produced interesting and illuminating results that warrant further investigation. Future research efforts might focus on the aforementioned recommendations of collaboration, market research and use of professional standards. Research questions generated by this impromptu study might include: *to what extent do American community colleges engage in collaborative practices that lead to institutional synergy; and to what extent are American community colleges aware of and utilize professional standards and research results focused on community colleges.*

REFERENCES

- American Association of Community Colleges (2013). Website homepage. Retrieved December 19, 2013 from <http://www.aacc.nche.edu/Pages/default.aspx>
- Association of Specialized and Professional Accreditors (2013). A quick reference guide to accreditation: Peer review. Retrieved December 17, 2013 from <http://ceph.org/assets/aspa-3-PeerReview.pdf>.
- Bowen, G. (2009) "Document Analysis as a Qualitative Research Method", *Qualitative Research Journal*, Vol. 9 Iss: 2, pp.27 - 40
- Bukvova, H. (2010). "Studying Research Collaboration: A Literature Review," *.Sprouts: Working Papers on Information Systems*, 10(3). <http://sprouts.aisnet.org/10-3>
- Center for Community College Student Engagement (2012). A matter of degrees: Promising practices for community college student success. Retrieved December 19, 2013 from http://www.ccsse.org/docs/Matter_of_Degrees.pdf.
- Center for the Study of Community Colleges (2013). Website homepage. Retrieved December 19, 2013 from <http://centerforcommunitycolleges.org/>.
- Center for the Study of Higher Education (2013). Website homepage. Retrieved December 19, 2013 from <http://www.memphis.edu/cshe/ccseq.php>
- Checkland, P. (2012). Four conditions of serious systems thinking and action. *Systems Research and Behavioral Science* n.29 (465-469). John Wiley & Sons Ltd.,
- Columbia University (2013). Community College Research Center Website homepage. Retrieved December 19, 2013 from <http://ccrc.tc.columbia.edu/>
- Corbin, J. & Strauss, A. (2008). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (3rd ed.). Thousand Oaks, CA: Sage.
- Council for the Advancement of Standards in Higher Education (2013). Website homepage. Retrieved December 19, 2013 from <http://www.cas.edu/>
- Council for the Study of Community Colleges (2013). What is the CSCC? Retrieved December 19, 2013 from <http://www.cscconline.org/>.
- Covey, S. (1989). *Seven habits of highly effective people: Powerful lessons for personal change*. New York: Free Press
- Dawidowicz, P. (2012) The person on the street's understanding of systems thinking. *Systems Research and Behavioral Science* n.29 (2-13)
- Eaton, J.S. (2012). An overview of U.S. accreditation. Council for Higher Education Accreditation.
- Eaton, J.S. (2012). Planning for higher education: The future of accreditation. Council for Higher Education Accreditation. Retrieved December 17, 2013 from http://www.chea.org/pdf/The%20Future%20of%20Accreditation_Planning_HE_JE.pdf.
- Higher Learning Commission, (2013¹). The roles and responsibilities of an HLC peer reviewer. Retrieved December 6, 2013 from <http://www.ncacih.org/Information-for-the-Peer-Corps/overview.html>.
- Higher Learning Commission (2013²). The AQIP pathway. Retrieved November 20, 2013 from <http://www.ncahlc.org/AQIP/aqip-home.html>.

- Higher Learning Commission (2013³) Action projects. Retrieved November 15, 2013 from <http://www.ncahlc.org/AQIP-Action-Project-Directory/aqip-action-projects.html>
- Higher Learning Commission (2010). Principles of High Performance Organizations. Retrieved November 1, 2013 from <http://www.ncahlc.org/download/annualmeeting/10Handouts/SpangehIA-SAT-0845-a.pdf>
- Higher Learning Commission (2010²). AQIP annual update reviewer guidebook, 2011-2012. Academic Quality Improvement Program, Higher Learning Commission.
- Higher Learning Commission, (2008). Principles and categories for improving academic quality: 2008 Revision
- Patton, M.Q. (2002). *Qualitative research and evaluation methods*. 3rd Edition. Thousand Oaks, CA: Sage Publication
- Senge, P. (2006,1990). *The fifth discipline: The art and practice of the learning organization*, 2ⁿ ed.. New York: Doubleday
- Shah, C., & González-Ibáñez, R. I. (2011, July). Evaluating the synergic effect of collaboration in information seeking. In *SIGIR* (pp. 913-922)
- University of North Texas (2013). Bill J. Priest Center for Community Colleges. Retrieved December 19, 2013 from <http://inhouse.unt.edu/unt-house-council-study-community-colleges>
- University of Texas (2013). Center for Community College Student Engagement. Website home page. Retrieved December 19, 2013 from <http://utclp.org/>