


Higher Education Leadership Competencies: Quantitatively Refining a Qualitative Model

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Abstract

This article highlights exploratory research in which a qualitative higher education leadership competencies model is refined through quantitative methods. Three groups of higher education leaders identify important competencies necessary for effective leadership. A survey was administered and analyzed. Five competency categories emerged: analytical, communication, student affairs, behavioral, and external relations.

Keywords

higher education, leadership, competencies, administration

In 1978, Burns stated, “Leadership is one of the most observed and least understood phenomena on earth” (p. 2). Leadership is, indeed, a dynamic undertaking that both researchers and practitioners have struggled to make sense of for centuries. Thousands of authors have contributed to leadership research within multiple contexts and frameworks (Bass, 1990; Stogdill, 1974). Although many of these authors contend that good leadership is good leadership no matter the type of organization, we suggest that higher education institutions present a unique set of leadership challenges. In particular, faculty members operate in an environment with little supervision yet maintain a powerful voice in significant institutional decisions. Leaders must balance the often-competing interests of these faculty against those of other constituents, including students, trustees, donors, government representatives, and community members.

In such an environment, a universal statement that defines higher education leadership is futile and irrelevant. However, defining competencies, such as knowledge, skills, behaviors, and attributes, that are important for effective leadership and strengthen the probability of achieving desirable organizational outcomes has practical implications that might prove useful.

When McClelland (1973) first wrote about competence, he postulated that aptitude and intelligence alone are not sufficient predictors of high performance. He believed, “For some purposes it may be desirable to assess competencies that are more generally useful in clusters of life outcomes, including not only occupational outcomes but social ones as well, such as leadership, interpersonal skills, etc.” (p. 9).

In 2002, Elizabeth McDaniel reported on the results of a qualitative study that identified core higher education leadership competencies (HELCC). In her research, a group of 30

former American Council of Education (ACE) fellows convened in an effort to identify characteristics and behaviors of executive leadership in higher education. Later, she enlisted the help of senior university administrators and college presidents in developing a model. Rather than identify presidential competencies, the participants were asked to describe general HELCC (or “core” competencies). Based on the information collected, a preliminary HELCC model was developed. Competencies were classified into four categories: context, content, process, and communication.

Purpose of Research

The research presented here extends McDaniel’s (2002) study by surveying senior university administrators and analyzing responses using factor analysis statistical methods. Three groups of administrators were invited to participate in the study: athletics directors, senior student affairs officers, and chief academic officers. These groups were chosen because, as a whole, they provide a diverse cross-section of higher education leaders. In addition, by selecting three unique senior administrative positions, further information can be gleaned about the similarities and differences between groups’ perceptions. Specifically, we set out to answer the following research question: Do HELCC, as developed by

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McDaniel, factor into four groups—context, content, process, and communication—that mirror McDaniel’s schema?

In this article, we begin by highlighting and verifying McDaniel’s (2002) research with examples from higher education literature that attest to the relevancy of her findings. Next, we discuss the methodology, including the development of the survey instrument that was used to test McDaniel’s model. We then report our findings, including a refined HELC model. Finally, we outline suggestions for future research and how this refined model can be further tested.

Review of Relevant Literature

McDaniel’s (2002) core HELC model contains four categories: context, content, process, and communication. The first higher education leadership competency category outlined by McDaniel is context. The competencies within this category relate to a leader’s understanding of dimensions, trends, and complex issues as they pertain to the U.S. system of higher education. It defines higher education leadership from a broad sense based on an almost universally accepted assumption that higher education institutions are unique organizations that operate within specific environmental contexts. These institutions are complex, unpredictable, and interdependent (Padilla, 2005, p. 16) as well as rich in tradition and functioning within cultures of shared governance (Bensimon, Neumann, & Birnbaum, 1989), faculty independence, and collaborative decision making (Brown, 2000; Green 1988; Padilla, 2005). Under these circumstances, competent leaders relate general knowledge about the U.S. system of higher education to particular institutions and use that knowledge for effective decision making. They recognize and embrace institutional culture (Bensimon et al., 1989; Birnbaum & Eckel, 2005; M. D. Cohen & March, 1974/1986) and its influence on the leader and the decision-making process.

In addition, context refers to a leader’s ability to navigate a highly politicized environment. Leaders navigate these environments by building relationships with multiple constituent groups and stakeholders, including trustees, accrediting agencies, businesses, alumni, community organizations, colleagues, state and federal government agencies, media, and others (Filan & Seagren, 2003; Gilley, Fulmer, & Reithlingshoefer, 1986; Julius, Baldrige, & Pfeffer, 1999; Rosenzweig, 2001).

Content, the second higher education leadership competency category, pertains to the various functions that define the organizational structure of higher education institutions. Higher education institutions are diverse organizations, requiring leaders to be well informed about multiple organizational elements (Bess & Webster, 1999; Bowen & Bok, 1998; Brown, 2000; A. M. Cohen, 1998; Goodchild & Wechsler, 1997). Specifically, competent leaders understand and are knowledgeable about academics (Ferren & Stanton,

2004; Padilla, 2005), student affairs (M. J. Barr, Desler, & Associates, 2003; Bess & Webster, 1999; Bowen & Bok, 1998), advancement (Bok, 2003; Lesh-Laurie, 1997; Worth, 1993), athletics (Abney & Parks, 1998; C. A. Barr, 1998; Thelin & Wiseman, 1990), technology (Ferren & Stanton, 2004; Gumport & Chun, 2005), and legal issues (Kaplan & Lee, 1995; Ruger, 1997; Samels & Martin, 1997).

Content competencies also hinge on a leader’s understanding of strategic planning and how it relates to the mission and goals of the institution. For instance, Ferren and Stanton (2004), among others, described competent leaders as able to understand finance, budgeting, institutional planning, and their interconnectedness (see also Allen, 2004; Filan & Seagren, 2003; Fisher & Koch, 2004; Massy, 1996; Padilla, 2005; Wolverson and Gmelch, 2002). In a sense, leaders maximize the distribution and allocation of resources throughout various campus units to achieve desired outcomes—programming, which fosters learning and enhances diversity, equality, and access.

McDaniel’s (2002) third higher education leadership competency category is process. Process competencies comprise the leader’s knowledge and understanding of leadership in general and the behaviors and processes necessary to achieve successful outcomes. McDaniel’s initial findings suggest that effective leaders have good senses of humor (Fisher, Tack, & Wheeler, 1988; Padilla, 2005), are unselfish (Bensimon & Neumann, 1993; Wolverson & Gmelch, 2002), possess integrity and core values (Birnbaum, 1992; Kouzes & Posner, 2003), and support the leadership of others (Birnbaum, 1992; Bensimon & Neumann, 1993). They have strong negotiation skills (Ehrle & Bennett, 1988; Land, 2003) and make decisions consistent with the mission and goals of the institution, engaging in inclusive, collaborative, and team-oriented behavior (Ferren & Stanton, 2004; Filan & Seagren, 2003). These leaders are lifelong learners who encourage professional development and training among their staff (Birnbaum, 1992; Green & McDade, 1991; Hoppe, 2003; Land, 2003). They learn through self-reflection (Filan & Seagren, 2003), through experience, and from others (Hoppe, 2003; Padilla, 2005). They continually refine their knowledge and accept new information to guide decisions. Leaders who display process competencies are flexible, are aware of their strengths and weaknesses, and consider multiple resources of information when necessary.

Process also refers to leaders’ creativity, flexibility, risk-taking nature, and adaptability. McDaniel’s (2002) findings indicate that these leaders tolerate ambiguous systems and processes and do not shy away from taking reasonable risks. They are change agents, are resourceful, and understand and attend to the needs of contemporary students. Such notions, mainstays of entrepreneurial leadership (Fisher & Koch, 2004; Peck, 1983), are clearly documented within McDaniel’s model.

The fourth higher education leadership competency category outlined by McDaniel (2002) is communication, which can be further delineated into three subcategories—verbal, nonverbal (or passive), and written. Verbal communication entails clearly articulating reasons for decisions and engaging in a give-and-take ongoing conversation with institutional stakeholders (Bensimon & Neumann, 1993; Birnbaum, 1992; Birnbaum & Eckel, 2005; Filan & Seagren, 2003; Padilla, 2005). Nonverbal communication competencies include skills such as listening and analytical thinking (Bensimon & Neumann, 1993; Fisher et al., 1988) as well as one's professional presentation (dress, demeanor, and so forth) (Fisher & Koch, 1996; Kouzes & Posner, 2003). Written communication skills require proficiency in multiple formats, such as letters, memos, and emails. All three types of communication manifest themselves in a leader's ability to engage multiple perspectives and units in decision making and dialogue around controversial issues (Ferren & Stanton, 2004; Green, 1988; Kouzes & Posner, 2003). Effective leaders use these communication competencies to articulate a meaningful vision for the organization (Fisher & Koch, 1996, 2004; Gilley et al., 1986; McLaughlin, 2004).

This brief summary clearly substantiates the existence of higher education research that supports McDaniel's (2002) findings and subsequent categories as viable leadership skills, attributes, and behaviors. Based on findings of a much more extensive nomological net of the literature, we pursued the questions of whether the categories described in McDaniel's model correctly identified the underlying competency factors (dimensions) of higher education leadership.

Instrument

Prior to this research, no survey existed that measured the perceived importance of HELC. Therefore, the HELC Survey was developed based on a thorough review of the literature, a pilot study, and feedback from subject matter experts. The self-report HELC Survey comprises three sections: Personal Information, Professional Information, and the HELC Inventory.

Part I, Personal Information, asks questions related to demographics, such as age, gender, ethnicity, and so forth. Part II, Professional Information, asks questions related to educational and professional experience. Questions and responses for Parts I and II were developed based on previous higher education leadership inventories and surveys (Corrigan, 2002; Fisher & Koch, 2004; Fisher et al., 1988; Selingo, 2005; Wolverton & Gmelch, 2002).

Part III, the HELC Inventory, presents statements and questions specific to HELC. Fifty-nine core HELC used for this research were developed and identified based on McDaniel's (2002) research and supported by the existing

literature. In addition, two open-ended questions were included at the end of the HELC Inventory. Responses to these questions are not reported in this article and will be used for future inquiry and analysis.

The HELC Inventory uses a Likert-type scale. HELC are listed as a series of statements, and participants are asked to rate the importance of each statement on a scale of from 1 (*not important*) to 5 (*very important*). A 5-point scale anchored at either end (rather than every point on the scale) was used in an effort to simplify the presentation of questions and to allow for enhanced reading comprehension (Dillman, 2000, p. 45). In addition to care regarding the content, care was taken to ensure the survey's format offered visual distinction to provide a "common stimulus for all respondents" and to enhance the response rate (Dillman, 2000, p. 96; Fowler, 2002).

Instrument Validity and Reliability

To strengthen the HELC Survey, multiple dimensions of validity were considered. McDaniel's (2002) framework provided the first phase of addressing content validity for the current research. As her article details, a panel of ACE fellows developed a list of necessary competencies needed for effective senior leadership in higher education. "The characteristics and behaviors they articulated were edited and organized into a comprehensive set of leadership competencies of effective senior leaders in higher education" (McDaniel, 2002, p. 83). Next, a group of roughly 100 college and university presidents, vice presidents, former ACE fellows, and other senior leaders of higher education institutions reviewed the original list and provided feedback. Finally, "the set of competencies in near-to-final form was shared with the American Council of Education Leadership commission, an advisory commission to ACE, composed of college and university presidents" (McDaniel, 2002, p. 83). Feedback was considered at each step of the validation process and incorporated into the final list of HELC.

For the current research, a panel of experts made up of educational leadership professors and researchers, a survey design professor, and higher education leaders reviewed the HELC Survey and provided feedback. Questions and/or statements were revised. In some cases, McDaniel's (2002) statements were rewritten for clarity, maintaining the essence and meaning of the competencies.

In addition to content validity, construct validity was considered. A nomological network (net) was created based on McDaniel's (2002) research and a thorough review of the literature to strengthen construct validity and to point to sources where logical theoretical relationships exist among the higher education leadership competency indicators (content, context, process, and communication). Construct validity was examined further by analyzing responses to the HELC Inventory through factor analysis.

Often referred to as “predictive validity,” criterion-related validity refers to “the degree to which a measure relates to some external criterion” (Babbie, 2004, p. 275). For example, measuring the competence of higher education leaders can be achieved by measuring successful higher education outcomes. The purpose of the current study is to actually identify the competencies necessary or important for effective leadership. Therefore, criterion-related validity was not applicable to the HELC Survey instrument. Criterion-related validity may be applicable to research extending the results of the current study, with the intent being to create a test used to measure general leadership competence of current or future higher education leaders.

Strengthening validity, from an empirical perspective, is often difficult in survey research. Strengthening reliability, however, is not. *Reliability* refers to the repeatability or consistency of a given measure or variable over time (Aldridge & Levine, 2001; Babbie, 2004). Survey research is generally high in reliability due to the standardized nature of the measurement. “By presenting all subjects with a standardized stimulus, survey research goes a long way toward eliminating unreliability in observations made by the researcher” (Babbie, 2004, p.). In addition, presenting appropriate, carefully worded questions can increase the reliability of participants’ responses (Fowler, 2002). Cronbach’s alpha was used to indicate the level of internal consistency.

Pilot Study

Following Dillman’s (2000, p. 140-147) four-stage approach to pretesting survey questionnaires and based on the aforementioned considerations related to validity and reliability, the HELC Survey instrument was tested in a pilot study prior to the final version’s being generated. A convenience sample of 29 individuals was identified and selected from a major research university, which met the criterion required for the sample frame of the actual research. In addition to the athletics director, chief student affairs officer, and chief academic officer, administrators employed in leadership positions one level below these individuals were included in the pilot. This convenience sample of participants was selected to generate a sufficient amount of feedback in an effort to strengthen the survey’s validity.

The pilot survey was a paper version sent to the participants’ business addresses listed in the Faculty and Staff Directory. Enclosed with each survey was a feedback questionnaire and a cover letter asking for participation, explaining the purpose of the research, and ensuring confidentiality. In addition, a self-addressed stamped envelope was included to help increase the response rate. A total of 17 pilot surveys were returned, for an overall response rate of 59%.

The qualitative data collected from the pilot study provided significant feedback to help validate, refine, and enhance the HELC Survey. The comments and feedback questionnaire was useful in strengthening the validity of the instrument. For

example, in an attempt to measure face validity, participants were asked if the survey was logical. Of the 16 participants who answered this question, 94% ($n = 15$) answered “yes,” indicating a high degree of face validity. Furthermore, content validity was measured by asking participants if they believed Part III (the HELC Inventory) asked relevant questions related to competencies for effective higher education leadership. Of the 15 participants who answered this question, 100% ($n = 15$) answered “yes,” indicating a high degree of content validity. Participants were also asked if questions and answer selections were confusing, if they would change anything about the survey instrument (format, instructions, wording, length, etc.), and if they would change anything about the survey content (personal information, professional information, and competencies). Feedback from the pilot study was recorded, and the survey was revised accordingly.

Population and Sample

We began this study with two assumptions in mind: One, the presidents in McDaniel’s (2002) study were credible and reliable sources of information (i.e., they knew what they were talking about); and two, other high-level administrators would identify the same competencies as important for effective higher education leadership. We decided to survey representatives from three groups—athletics directors, senior student affairs officers, and chief academic officers. Because of the widespread variability and complex nature of higher education institutions, a sample frame of comparable institutions with similar attributes was identified to make confident generalizations from the analyses (Babbie, 2004).

Sample Criteria

Two higher education classification systems were initially analyzed: the Carnegie classification and the NCAA classification. Based on a thorough review of both classification systems, a decision was made to use NCAA Division I institutions for sample selection.

There were many reasons that drove this decision. Significant variance exists between the levels of both NCAA and Carnegie institutions. For example, NCAA “division classification is based on several criteria, including, but not limited to, the size of the financial base, the number and types of sports offered, the focus of the program, and the existence of athletic grants-in-aid” (Abney & Parks, 1998, p. 120). Division I institutions generate significant revenue, compete in football and/or men’s basketball, offer full scholarships, and are typically engaged in highly public competition (Abney & Parks, 1998; C. A. Barr, 1998). Furthermore, Division I institutions strive for regional and national prominence; in contrast, Division II schools strive for regional recognition (Abney & Parks, 1998), and Division III institutions focus more on participation (C. A. Barr, 1998).

Similarly, the Carnegie classification system is based on multiple variables including enrollment size, types of degrees offered, institutional setting, amount of research funding generated, and number of PhDs awarded (Carnegie Foundation for the Advancement of Teaching <http://classifications.carnegiefoundation.org/>). Doctorate-granting universities (Carnegie classifications RU/VH, RU/H, and DRU) must graduate at least 20 doctoral students a year, whereas large master's colleges and universities (Carnegie classification Master's/L) must graduate a minimum of 200 master's students, but less than 20 doctoral students, each year (Carnegie Foundation for the Advancement of Teaching). The obvious difference between the NCAA and Carnegie classification systems is that the NCAA system is based on intercollegiate athletics attributes and the Carnegie system is based on academic attributes. However, 94% of NCAA Division I institutions are classified as Carnegie master's- or doctorate-granting institutions, with more than 50% classified as doctoral institutions, resulting in a fairly homogeneous group both athletically and academically.

At the time of this research, there were 327 institutions that met the criteria of participating in NCAA Division I athletics. The athletics director, chief student affairs officer, and chief academic officer at each institution were included in the sampling frame. Because of the small number of institutions and to ensure the sample was representative of the population, all members of the sample frame were surveyed (i.e., a census was conducted).

Data Collection

The pilot survey suggested that most participants would prefer to take an online survey rather than a paper survey. Therefore, in an effort to maximize the response rate, the final version of the HELC Survey was administered through an online survey application known as Survey Monkey. All revised questions were entered into Survey Monkey. Items listed in Part III, the HELC Inventory, were inputted in random order.

Pretest

Prior to the administration of the HELC Survey to the sample frame of participants selected for this study, a pretest was conducted using the online version of the survey. The purpose of the pretest was to allow the researcher to become familiar with administering the survey and exporting data using the Survey Monkey Web site. In addition, the pretest provided the researcher an opportunity to evaluate the process of filling out and submitting the survey from users' perspectives and identify any issues, problems, or concerns with the survey that may have been overlooked.

Babbie (2004) postulated, "It's not usually essential that the pretest subjects comprise a representative sample, although you should use people for whom the questionnaire

is at least relevant" (p. 256). Therefore, the online pretest of the HELC Survey was administered to a diverse group of individuals ($N = 12$) consisting of 7 subject matter experts, 2 associate deans of a dental school, and 3 individuals who work outside of a traditional academic environment with no experience in higher education leadership. The purpose of selecting 3 individuals with little expertise in higher education was to obtain an outside perspective regarding the survey format, user-friendliness, and any other aspect of the survey that individuals with expert knowledge about the subject might overlook. All participants provided feedback regarding questions, responses, format, and any other portion of the survey that elicited concern. The majority of feedback centered on spelling errors, length of time to complete the survey, and ease of use regarding the online version.

Survey Administration

Email addresses for the sample frame were manually collected from college and university Web pages, from department home pages, and by phone. In total, 971 email addresses were obtained. Email addresses consisted of those of 327 athletics directors, 322 senior student affairs officers, and 322 chief academic officers.

Using Survey Monkey's list management feature, all participants were emailed letters requesting their participation. The letter, located in the body of the email, detailed the purpose of the research, estimated time to complete the survey, and ensured confidentiality. In addition, participants were given the option to request a hard copy of the survey. The survey was administered during a period of approximately 8 weeks, with reminders sent out at 2-week intervals.

Response

Of the 350 respondents, 295 completed the entire HELC Inventory (30% of the original sample); these participants' responses were used for analysis. Of the 295 participants who completed surveys, 95 were athletics directors, 123 were senior student affairs officers, and 77 were chief academic officers. This total was less than the optimal response rate (10 participants per scale item). However, the study's responses provided an acceptable participant-to-variable ratio of 5:1 (Bentler & Chou, 1987; Dillman, 2000), exceeding the minimum requirements for conducting principal components factor analysis.

Results

Principal components analysis with varimax rotation was run using SPSS 14.0 to reduce the 59 variables of the HELC Inventory data into components according to rotated factor scores. Kachigan (1986) stated, "One of the most important uses of factor analysis is in the identification of factors

underlying a large set of variables” (p. 379). Kachigan continued, “The analyst must often use personal judgment as to what constitutes a meaningfully high loading, based on the distribution of loadings *within* a factor and *across* factors, as well as the absolute magnitudes of the loadings” (p. 393). With this advice in mind, initial factor loading scores of .4 or above were retained for further analysis. Common lower bound factor loadings are typically set between .3 and .5 (Kachigan, 1986); therefore, .4 is considered acceptable. In addition, variables were eliminated that cross-loaded (loaded on more than one factor) at .4 or above. Multiple analyses were run, including three-factor, four-factor, five-factor, and six-factor solutions to determine appropriate dimensions based on factor loading scores and existing theory. Scree plots were also observed and considered for each factor solution. Some variables were eliminated based on cross-loading scores but then reanalyzed and retained based on new, refined scores that emerged within new factor solutions. As the data-reduction process continued, distinct grouping of variables emerged with factor scores falling at .5 and above. These variables were retained for the final model. There were no cross-loading variables at .5 or higher. However, there were four variables that cross-loaded at .4 or higher in the final model. These variables were retained because of the distinct relationship with other variables that fell within the same component. In total, more than 250 possible factor solutions were examined.

As Tabachnick and Fidell (2001) stated, “although there are relevant statistical considerations to most of these steps, an important test of the analysis is its interpretability” (p. 283). The first component extracted using principal components factor analysis usually accounts for the most variance explained (Kachigan, 1986). Each component extracted thereafter accounts for less and less of the variance (Kachigan, 1986). Based on extensive analysis of the data and existing theory, a five-component model (rather than McDaniel’s [2002] original four-component model) emerged as the most logical and meaningful solution for the current data.

A New Model

Component 1, labeled by the researchers analytical leadership competencies, explained 20.48% of the variance of the data. Component 2, communication leadership competencies, explained 8.71% of the variance of the data. Component 3, student affairs leadership competencies, explained 8.31% of the variance of the data. Component 4, behavioral leadership competencies, explained 7.89% of the variance of the data. Finally, Component 5, external relations leadership competencies, explained 7.84% of the variance of the data. In total, 53.22% of the variance in the data was explained by the final five-factor solution, as described above. Table 1 summarizes the results of the five-component solution.

Summary of New HELC Model

Analytical leadership competencies combine entrepreneurialism, creativity, strategic thinking, and action. The first three items, entrepreneurialism, creativity, and strategic thinking, are used to make systematic, process, and action-oriented decisions for the good of the organization. These characteristics are, in many ways, transferable outside of the higher education industry. Only 3 of the 16 competencies in this category, “Fosters the development and creativity of learning organizations,” “Demonstrates understanding of academics,” and “Demonstrates understanding of complex issues related to higher education,” are contextual to higher education institutions. Likewise, most of the competencies listed in the entire HELC model are not specific to higher education. In fact, the competency “Demonstrates understanding of academics” was nearly left out of the final model because it did not factor well with most of the solutions tested.

A grouping of communication leadership competencies also emerged. The conclusion here is that higher education leaders should be competent in both oral communication and writing and should engage multiple perspectives in decision making. Professional presentation, a type of nonverbal communication, is also important, ranking as the third most important competency on the Likert-type scale (1 to 5) for all groups combined. Questions remain, however, regarding how and when collaborative forms of communication should be employed in the leadership process. Although committees and shared governance drive the decision-making process on many college and university campuses, results of this research are not clear about where these processes fit within the HELC model.

A category of behavioral leadership competencies also grouped together. This category is defined by exhibiting lighthearted, unselfish behavior, with a strong focus on and interest in the actual people within the organization who contribute to successful organizational outcomes. In short, a leader’s behavior is important, with average Likert-type scores for all behavioral competencies ranking highest when compared to the other categories for all groups combined. In addition, the behavioral leadership category was the third factor to load, suggesting that there is little disagreement among the respondents about this dimension. This shows little doubt about the importance of behavior leadership competencies and is consistent with Collins’s (2001) finding in business and industry regarding what he called “Level 5 Leadership.” Level 5 Leadership blends “personal humility with intense professional will” (Collins, 2001, p. 21). Collins stated,

Level 5 leaders channel their ego needs away from themselves and into the larger goal of building a great company. It’s not that Level 5 leaders have no ego or self-interest. Indeed, they are incredibly ambitious—but

Table 1. Factor Loading Scores of New Five-Component Model

Leadership Competencies	Leadership Competencies				
	Analytical	Communication	Student Affairs	Behavioral	External Relations
Analytical					
Fosters the development and creativity of learning organizations	.519	-.093	.176	.185	.125
Demonstrates understanding of academics	.556	.084	.097	.217	.036
Engages multiple perspectives in decision making	.622	.099	.176	.197	.055
Learns from self-reflection	.602	.270	.179	.315	.015
Tolerates ambiguity	.522	-.085	.219	.227	-.316
Sustains productive relationships with networks of colleagues	.521	.190	.154	.180	-.048
Applies analytical thinking to enhance communication in complex situations	.640	.166	.225	.165	.136
Facilitates the change process	.586	.342	.155	.146	.133
Demonstrates resourcefulness	.499	.321	.263	.233	.168
Demonstrates ability to diplomatically engage in controversial issues	.704	.127	.133	.115	-.002
Demonstrates negotiation skills	.591	.185	.051	.174	.279
Seeks to understand human behavior in multiple contexts	.666	.114	.182	.183	.237
Accurately assesses the costs and benefits of risk taking	.607	.350	.092	.060	.315
Facilitates effective communication among people with different perspectives	.614	.248	.405	.135	.085
Demonstrates understanding of complex issues related to higher education	.681	.156	.445	.022	.001
Responds appropriately to change	.586	.326	.216	.056	.072
Communication					
Presents self professionally as a leader	.068	.529	.323	.285	.094
Communicates vision effectively	.286	.630	-.021	.084	.052
Communicates effectively	.096	.693	.172	.063	.053
Expresses views articulately in multiple forms of communication	.246	.609	.032	.030	.159
Communicates effectively with multiple constituent groups in multiple contexts	.415	.492	.207	.171	.088
Student affairs					
Responds to issues and needs of contemporary students	.290	.172	.590	.216	-.079
Is attentive to emerging trends in higher education	.456	.128	.545	-.015	.130
Demonstrates understanding of student affairs	.305	.148	.740	.146	.054
Demonstrates understanding of legal issues	.281	.101	.692	.121	.185
Behavioral					
Recognizes the value of a sense of humor	.312	.011	.093	.673	.236
Supports leadership of others	.309	.151	.120	.584	-.112
Demonstrates unselfish leadership	.026	.218	.097	.751	.060
Learns from others	.381	.224	.272	.505	.046
Does not take self too seriously	.285	-.028	.033	.631	.120
External relations					
Relates well with governing boards	.263	-.053	.078	.091	.615
Applies skills to affect decisions in government contexts	.291	-.297	.322	.088	.551
Demonstrates understanding of advancement	.115	.149	-.118	.002	.741
Demonstrates understanding of athletics	-.229	.245	.087	.089	.735
Works effectively with the media	.132	.368	.180	.103	.586
Eigenvalue	7.17	3.05	2.91	2.76	2.74
Percentage of variance accounted for	20.48	8.71	8.31	7.89	7.84
Cumulative variance accounted for					53.22

Note: Boldface type indicates highest factor loading score for each variable/category correlation.

their ambition is first and foremost for the institution, not themselves. (p. 21)

Although Collins and his team of researchers were somewhat surprised with their findings, it should be noted that Collins's work was empirically based. The current research supports the claims made by Fisher et al. (1988), Padilla (2005), Wolverton and Gmelch (2002), and Collins (2001) regarding the importance of unselfish leadership for effective organizational outcomes. There is a clear grouping of variables that define this behavior for effective leadership.

Although emerging late in the data-reduction process, student affairs leadership competencies were identified as a category in the HELC model within the final five-factor solution. These competencies are all associated with student issues, including student needs, trends, and legal consideration. This category is the most ill defined of all HELC model categories and is in need of further refinement. Current student affairs leaders should be surveyed to identify important student affairs leadership competencies necessary for effective higher education leadership.

Finally, external relations competencies were identified as the fifth category of the HELC model. It is widely recognized that presidents of modern higher education institutions spend a majority of their time on externally related issues. This is largely driven by the intense competition for private funding and multiple stakeholder interests. Likewise, the essence of an athletics director's position is defined by externally related tasks and responsibilities. Competencies included in this category include relating with various constituent groups, working effectively with media, and understanding advancement and athletics.

Reliability Analysis

One true test of any instrument is its reliability. Variables measured on a summated scale are considered reliable only when repeated measures are considered for the test instrument (Santos, 1999). However, in cases when repeated administration of a test instrument is not feasible, as in the case with the current research, Cronbach's alpha provides an acceptable numerical coefficient of reliability commonly used in survey research. "Cronbach's alpha is an index of reliability associated with the variation accounted for by the true score of the 'underlying construct'" (Santos, 1999, p. 2). Coefficient ranges fall between 0 and 1 and are more reliable as scores increase (Santos, 1999). Most reliability coefficients are considered acceptable at .7 or greater (Aldridge & Levine, 2001; Nunnally, 1978).

Cronbach's alpha coefficient of reliability scores for Components 1 through 5 of the new model were analyzed using SPSS statistical software (Version 14.0). The analysis resulted in scores of .92 (analytical leadership competencies), .75 (communication leadership competencies), .77 (student affairs leadership competencies), .77 (behavioral leadership

Table 2. Reliability Scores: Cronbach's Alpha

Component (Leadership Competencies)	Alpha
Analytical	.92
Communication	.75
Student affairs	.77
Behavioral	.77
External relations	.72

competencies), and .72 (external relations leadership competencies). Table 2 summarizes Cronbach's alpha scores for the five components.

Limitations and Suggestions for Future Research

Survey research based on person perception has inherent validity issues because individuals tend to give socially desirable answers. Low response rates compound the issue. These concerns can be addressed through repeated administration and refinement of the survey instrument and attempts to broaden the response rate.

The current research was based on the perceptions of athletics directors, senior student affairs officers, and chief academic officers. These positions were chosen because of their executive-level status and because they have a significant impact on student outcomes, development, and performance. Moreover, they have been largely ignored from an empirical standpoint and provide for future comparisons of three unique and diverse college leaders. Consequently, this research represents a significant step in offering data about the attitudes, beliefs, and perceptions of this population.

The response rate might be enhanced by widening the scope of participants, including individuals from lower division NCAA schools (Divisions II and III) as well as National Association of Intercollegiate Athletics institutions. Increasing the response rate, and subsequently increasing the absolute sample size, would not only strengthen the reliability of the results but also allow for statistically reliable competency models to be created for each group of participants (athletics directors, senior student affairs officers, and chief academic officers) using principal components factor analysis methods (Nunnally, 1978).

In addition, senior executives, including presidents, vice presidents of finance and administration, vice presidents of development and advancement, and legal counsel, should be surveyed to gain a full understanding of competencies necessary for effective higher education leadership. Deans, department chairs, and directors should also be included. Although this research attempted to identify core HELC, subleadership competencies could be developed across multiple layers of higher education organizations.

The current HELC model competencies should be reviewed, and in some cases revised, to better reflect and define the underlying construct of each component. For

instance, more research is necessary to differentiate between different forms of communication and how they relate to effective higher education leadership. Similarly, although shared governance drives many decisions on college campuses, more research should be conducted to measure the true effectiveness of this governance structure. The current research suggests that effective teams are important, yet questions remain regarding inclusion and engagement of multiple units in the decision-making process. More research is also needed to describe behavioral competencies, including statements related to empathy, sincerity, and empowerment. In addition, the categories of student affairs and external relations lack important components and are ill defined. More research is also needed regarding the relevance, or irrelevance, of McDaniel's (2002) competencies that were not retained in the final version of the HELC model.

Conclusion

The intent of this research was to quantitatively test McDaniel's (2002) qualitative HELC model and present a new, more refined model. Results confirmed portions of McDaniel's schema, such as the existence of a category of variables defining communication leadership competencies; however, gaps in her framework were also exposed. The HELC model presented in this article provides fresh concepts and ideas for researchers to consider when studying this topic in the future.

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