# Investigating the Construct Validity of the ISLLC 2008 Standards Through Exploratory Factor Analysis*

Soundaram Ramaswami
Gerard Babo



**Abstract**

This paper presents and discusses the statistical analysis of the responses from an online survey administered to a sample of US superintendents (n=225) in an attempt to explore and authenticate the construct validity of the ISLLC 2008 Standards through exploratory factor analysis. Using a Principal Axis Factor method, 6 factors were extracted representative of the six ISLLC Standards. Thirteen items loaded on the 1st factor that represented items mainly from Standards 1, 2 & 3. Standard 4 was split between the 2nd & 6th factor and Standard 5 between factors 4 & 5. The 3rd factor consisted of 4 items from Standard 3. These results confirm to some extent the construct validity of the ISLLC 2008 Standards with the exception of Standard 6, which had only three items represented in factors 2 & 3. Moreover, Standards 4 & 5 each exhibited two additional dimensions, which might suggest a need for the development and adoption of supplemental "footprint" standards.

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**Sumario en español**
Este papel presenta y discute el análisis estadístico de las respuestas de una inspección en línea administrada a una muestra de supervisores de EEUU (n=225) en una tentativa para explorar y autenticar la validez de constructo del ISLLC 2008 Estándares por el análisis exploratorio del factor. Utilizando un Principal método del Factor de Eje, 6 factores fueron extraídos a representante de los seis Estándares de ISLLC. Trece artículos cargaron en el primer factor que representó artículos principalmente de Estándares 1, 2 & 3. El estándar 4 fueron partidos entre el 2 & el factor y el Estándar sextos 5 entre tiene en cuenta 4 & 5. El factor tercero consistió en 4 artículos del Estándar 3. Estos resultados confirman hasta cierto punto la validez de constructo del ISLLC 2008 Estándares a excepción de Estándar 6, que tuvo sólo tres artículos representados en factores 2 & 3. Además, los Estándares 4 & 5 exhibieron cada uno dos dimensiones adicionales, que quizás sugieran una necesidad para el desarrollo y la adopción de estándares suplementarios de "huella".

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## 1 Introduction

Empirical evidence suggests that effective principal leadership is central to not only overall school success but an increased level of student efficacy and student academic performance (High & Achilles, 1986; Waters & Kingston, 2005; Kaplan, Owings & Nunnery, 2005; Portin, Feldman & Knapp, 2006). In a 2004 study, Leithwood, Louis, Anderson, and Wahlstrom report that the influence of the principal on student learning is ranked only second to that of the classroom teacher. Branch, Hanushek and Rivkin (2012) affirm this finding claiming that the selection and retention of quality school building leaders is crucial to the success of a school, particularly for schools nested within high poverty communities. Consequently, the need to ensure the quality preparation, selection and professional development of current and future school building principals is paramount.

In 1994, the National Policy Board for Educational Administration (NPBEA) in collaboration with the Council of Chief State School Officers (CCSSO) created the Interstate School Leaders Licensure Consortium (ISLLC) and charged them with developing a set of standards for school leaders. At the outset, "ISLLC comprised 24 states, most members of NPBEA, and other key stakeholder groups, such as the National Alliance of Business, with an interest in the health of leadership in America's schools and school districts" (Murphy, 2005, p. 155).

It was the hope of the original authors of ISLLC that these standards would facilitate the restructuring of the profession of public school administration and influence individual state's leadership standards as they applied to licensure, university and college leadership preparation programs, program approval and accreditation, re-licensure, professional development, administrator evaluation and state-wide reform. The implication was that the NPBEA not only wanted to globally influence the profession but also to galvanize it in an attempt to address the need for a new vision of school leadership for the 21st century (Murphy, 2003). Additionally, one could argue that the tenor of the times, a standards-driven reform movement, which continues to this day, played no small part in influencing the NPBEA and the eventual development of the ISLLC Standards (Murphy, 2005).

At the crux of this impetus for a set of national leadership standards was the premise that the leaders of the future must be focused and driven by the moral imperative that at the heart of all schooling must be a core value dedicated to ensuring that each and every child has the ability to succeed and reach his or

her human potential regardless of environmental and/or residential circumstances (Murphy, 2003; Murphy & Shipman, 1999; Murphy, Yff & Shipman, 2000).

Since these standards have influenced principal licensure code in 43 states (Derrington & Sharrat, 2008) and NCATE accredited leadership preparation institutions across the country, we can conclude that CCSSO and NPBEA have partially achieved their original intended goal. In fact, the licensing exam for prospective principals, The School Leaders Licensure Assessment (SLLA), which is based entirely on the ISSLC standards and administered by Educational Testing Services is the singular test for licensing in 19 states as of 2011 (ETS.org 2011).

Murphy, Yff and Shipman (2000) base the foundational framework for ISLLC on four (4) conceptual archetypes, which see school leaders for the future as "community servant[s]" (p.19), "organizational architect[s]" (p.19), "social architect[s]" (p.20), and "moral educator[s]" (p.21). Accordingly, in 1996 the first iteration of the ISLLC Standards for School Leaders was proposed and released by Council of Chief State School Officers (CCSSO, 1996). The six original standards were based on the following seven guiding principles:

1. "Standards should reflect the centrality of student learning
2. "Standards should acknowledge the changing role of the school leader
3. "Standards should recognize the collaborative nature of school leadership
4. "Standards should be high, upgrading the quality of the profession
5. "Standards should inform performance-based systems of assessment and evaluation of school leaders
6. "Standards should be integrated and coherent"
7. "Standards should be predicated on the concepts of access, opportunity, and empowerment for all members of the school community" (Murphy & Shipman 1999, p. 218; Murphy, Yff & Shipman 2000, p. 24).

Beginning with their first appearance in the national arena of educational leadership and administrator preparation in 1996, ISLLC has had its fair share of critics and cynics. The questionable influence or lack of empirical evidence supporting how these standards just might improve student efficacy and classroom instruction was considered problematic (English, 2005; English, 2006; Lindle, Stalion & Young, 2004). Chief among these sceptics, English (2006), likened the adoption of these standards as something akin to the development of no more than an "*ideology* parading as a science" (p. 82). Many believe that the ISLLC Standards are neither realistic nor comprehensive enough to ensure that current and future leaders will be given all that is needed to support the continued academic growth of students (Creighton & Wilmore, 2003; Hemmen, Edmondson & Slate, 2009).

In 2008, the original Interstate School Leaders Licensure Consortium Standards (CCSSO, 1996) were revised by the National Policy Board for Educational Administration (NPBEA) to include an operational set of "functions" that have come to be known as ISLLC 2008 (see http://www.wallacefoundation.org/knowledge-center/school-leadership/principal-evaluation/Pages/Educational-Leadership-Policy-Standards-ISLLC-2008.aspx (CCSS0, 2008). The stimulus for this update was to address the complexity of the original 1996 standards and its accompanying knowledge, dispositions, and performance indicators and the consistent criticism of the lack of an empirical research base claimed by many of the ISLLC opponents.

In much of the professional discourse concerning the original ISLLC Standards and the new ISLLC 2008 Standards, little has addressed the actual validity of these standards even though they initiated major reform in a majority of principal preparation programs (Hemmen, Edmondson & Slate, 2009; Murphy, 2003) and in state legislatures across America. In fact, one could posit that the ISLLC standards have become the gold standard for both the preparation and licensing of school building principals over the past ten years.

However, one exception to this aforementioned void in the literature was the work of Lindle, Stallion and Young (2004), which explored the content validity of the original ISLLC Standards in relation to Kentucky's leadership standards based on self reported and observational data on principals' use of time. Results from this study confirmed the extreme yet disjointed responsibilities of a building principal and suggested that the ISLLC standards might not provide enough guidance for the development of instructional leadership

competencies for principals when compared to Kentucky's Standards and Indicators for School Improvement (p.1).

## 2 Purpose

Therefore, the purpose of this study was to explore, present and discuss the statistical analysis of the responses from an online survey administered to an equal cross section of the nation's superintendents (n=225) in an attempt to establish and authenticate the construct validity of the ISLLC 2008 Standards through exploratory factor analysis.

## 3 Methodology

The data used for this study came from a larger study that attempted to prioritize the ISLLC 2008 Standards' "footprints" and "functions." The original study was based on survey data collected from a national sample of school superintendents who were asked to rank order the ISLLC 2008 Standards' "footprints" and "functions" when they applied them to the process of principal evaluation (Babo & Ramaswami 2011a; 2011b).

### 3.1 The Survey and Data Collection

The survey data for this study was collected through an online data collection tool developed through Qualtrics Inc. (http://www.qualtrics.com/[2] ). The survey was developed based on The Educational Leadership Policy Standards: ISLLC 2008 (CCSSO, 2008).The instrument consisted of a single multiple response matrix question that required the superintendents to rate the importance of each of the ISLLC 2008 Standards' six "footprints", followed by 66 items/statements that covered the 31 "functions" delineated within each of the ISLLC 2008 Standards. The reliability index for the 66 item survey was calculated using Cronbach's Alpha and established at .95. Survey construct validity was acquired by means of expert review.

Purposeful random sampling was used to identify a potential national sample of 2,000 school superintendents. Of those e-mailed, 1,743 were actually delivered. A 21% return rate was established for a sample size of 363 respondents. Of those, only a range of 215-225 respondents answered all of the 66 items on the survey for an eventual return rate of 13%. This small response rate is noted as a limitation.

## 4 Results and Discussion

### 4.1 Demographic Results

An equitable cross section of the United States was represented by the participants in this study. Males made up 70% of the respondents and females 30%, which is actually quite representative of the superintendents' gender distribution nationally. Regions of the country were also proportionately represented with 25% from the Southeast, 24% from the West & Midwest respectively, 22% from the Northeast and only 5% from the Southwest. Approximately 79% had 11 or more years of experience in administration and 6 or more years of teaching experience. Eighty per cent of the respondents were situated in $K-12$ school districts and 46% reported having earned a doctorate (Ed.D/Ph.D).

### 4.2 Findings

The following discussion will focus on the factor analysis that was carried out with all the 66 survey items that represent the ISLLC 2008 Standards' "functions". This multivariate data reduction method was utilized to confirm that "functions" that were conceptualized under the six standards have construct validity, using the survey responses of national superintendents, regarding the evaluation of the principals using these standards.

[2] http://www.qualtrics.com/

First, the data had to be pre-processed to address "missing data" (about 30) in the 66 survey items. Three common methods of inputting missing data are pairwise deletion, list wise deletion and mean replacement, Since list wise deletion, would further reduce the sample size, mean substitution, and pairwise deletion were considered. However, SPSS did not allow the saving of factor scores when using pairwise deletion procedure. Therefore, mean substitution was used to replace the missing data which increased the sample size to 253.

Additionally, Kaiser-Mayer-Olkin Measure of Sampling Adequacy (KMO) was utilized to confirm that the patterns of correlations are relatively compact and that the sample size is adequate. The KMO for this study was .847 which is considered "good" (Hutcheson and Sofroniou 1999, p. 224-25), and indicates that reliable and distinct factors can be extracted. Furthermore, a significant (sig. =.000) Bartlett's Test of Sphericity showed that the R-matrix is not an identity matrix, and attested to the appropriateness of conducting a factor analysis with this data (See Table 1).

Table 1

*KMO and Bartlett's Test*

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .847 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 7424.596 |
| | df | 2145.000 |
| | Sig. | .000 |

As a precursor to the factor analysis, a correlation analysis was carried out and it showed that no two items were highly correlated. Also, for each item, there were many other items with significant correlations. As a next step, a principal axis factor analysis was performed. This method of factor extraction was chosen as it generally provides more interpretable solutions compared to other methods. Although one can opt to extract factors based on an eigenvalue greater than 1, this factor analysis pre-determined the number of factors to be 6, based on the six ISLLC standards. The initial unrotated extraction showed that the first factor explained 24.42% of the total variance, while the second factor explained 5.19%. The subsequent factors 3, 4, 5 & 6 explained 4.44%, 3.55%, 3.09% and 3.02%, respectively (Table 2). As expected, factor 1 explained most of the variance, followed by the others with less and less explained variance. Altogether, the six factors explained 43.73% of the total variance.

Table 2

*Initial Principal Axis Factor Analysis with All 66 Items: Total Variance Explained*

| | Initial Eigen values | | Rotation Sums of Squared Loadings | |
|---|---|---|---|---|
| **Factor** | **% of Variance** | **Cumulative %** | **% of Variance** | **Cumulative %** |
| 1 | 24.423 | 24.423 | 9.195 | 9.195 |
| 2 | 5.193 | 29.615 | 8.988 | 18.183 |
| 3 | 4.447 | 34.063 | 6.358 | 24.541 |
| 4 | 3.548 | 37.610 | 5.779 | 30.321 |
| 5 | 3.090 | 40.700 | 4.687 | 35.008 |
| 6 | 3.026 | 43.726 | 3.499 | 38.507 |

Since the interpretability of the factors can be improved by rotation, (by maximizing the loading of each variable on one of the extracted factors and minimizing the loading on other factors) a varimax rotation method was adopted. The varimax rotation is the preferred method as it assumes that the factors are orthogonal and not correlated. This would also lead to better interpretation of the factors. With the varimax rotation, the distribution of the variance changed, redistributing the variance among the six factors. The rotation sums of squared leadings (see Table 2) showed that the common variance explained by all the six factors was 38.51% and the variance explained by the 1st factor was only 9.20% compared to the before rotation variance of 24.42%. A similar pattern is also seen with factors 2 through 6 with variances 8.99%, 6.36%, 5.78%, 4.69% and 3.5% as opposed to 5.19%, 4.44%, 3.55%, 3.09% and 3.02%, respectively.

Tables 3 & 4 show the initial solutions and factor loadings for each of the six dimensions (The factor

results are split into two tables for readability). In this analysis, factor loadings less than .4 were suppressed as they represent a low correlation between the item and the factor. This decision resulted in twenty one items with a loading less than .4 which were excluded from the factor structures.

Eleven items loaded on factor 1. The factor loadings ranged from .691 to .405. Five of these items were from Standard IV (Community) and five from Standard VI (Larger context). One was from Standard II (Instruction). They mostly addressed the constructs of collaborating with community, utilizing diverse community and technology resources, adapting leadership strategies, and influencing local and national decisions to promote student learning.

The second factor consisted of 15 items with four items each from Standards I, II & III, two items from Standard IV and one item from Standard V. These items mainly focused on evaluating, revising and monitoring school goals & plans and student instruction and learning.

Table 3

*Initial Factor Model - Factors 1 & 2 with Factor Loadings*

| *Items* | *Standard* | *Factors* | |
|---|---|---|---|
| | | *1* | *2* |
| Promote understanding, appreciation, and use of the community's diverse intellectual resources. | IV | .691 | |
| Promote understanding, appreciation, and use of the community's diverse social resources. | IV | .667 | |
| Promote understanding, appreciation, and use of the community's diverse cultural resources. | IV | .655 | |
| Assess and analyze emerging trends and initiatives in order to adapt leadership strategies. | VI | .561 | |
| Sustain productive relationships with community partners. | IV | .549 | |
| Build productive relationships with community partners. | IV | .547 | |
| Act to influence State and/or national decisions affecting student learning. | VI | .536 | |
| Anticipate emerging trends and initiatives in order to adapt leadership strategies. | VI | .531 | |
| Be an advocate for families and caregivers. | VI | .496 | |
| Act to influence local and/or district decisions affecting student learning. | VI | .461 | |
| Promote the use of the most effective and appropriate technologies to support learning. | II | .405 | |
| Evaluate a school's progress and revise plans accordingly. | I | | .610 |
| Ensure a system of accountability for every student's academic success. | V | | .591 |
| Monitor a school's progress and revise plans accordingly. | I | | .568 |
| Monitor the impact of the instructional program. | II | | .566 |
| Evaluate the impact of the instructional program. | II | | .556 |
| Develop assessment and accountability systems to monitor student progress. | II | | .533 |
| Ensure teacher time is focused to support student learning. | III | | .525 |
| Ensure teacher time is focused to support quality instruction. | III | | .520 |
| Collect data and information pertinent to the educational environment. | IV | | .505 |
| Implement a plan to achieve the school's goals. | I | | .466 |
| Analyze data and information pertinent to the educational environment. | IV | | .445 |
| Ensure organizational time is focused to support quality instruction. | III | | .433 |
| Collect and use data to identify school goals. | I | | .428 |
| Supervise instruction. | II | | .421 |
| Ensure organizational time is focused to support student learning. | III | | .418 |

Factor 3 was comprised of 8 variables all from Standard V, which deals with ethical issues. The loadings ranged from .720 to .412. Five items made up factor 4 and the factor loadings ranged from .528 to .432. These items represented professional practices (see Table 4).

Four items from Standard III represented factor 5, whose main focus was management and operational issues and resources. The factor loadings for these four items ranged from .651 to .543. The last factor, factor 6, had only 2 items from Standard IV which dealt with building and sustaining positive relationships with families and care givers (see Table 4).

Of the 21 items that did not have high correlation with the factors, 75% of them were from Standard II (9) and Standard I (6) that dealt with Instruction and Vision. Only 3 were from Standard III, two from Standard V and one from Standard VI. It is interesting to note that none of the items from Standard IV (Community) exhibited low factor loadings.

Table 4

*Initial Factor Model - Factors 3, 4, 5, & 6 with Factor Loadings*

| Items | Standard | Factors | | | |
|---|---|---|---|---|---|
| | | 3 | 4 | 5 | 6 |
| Evaluate the potential moral consequences of decision-making. | V | .720 | | | |
| Consider the potential moral consequences of decision-making. | V | .682 | | | |
| Consider the potential legal consequences of decision-making. | V | .585 | | | |
| Evaluate the potential legal consequences of decision-making. | V | .561 | | | |
| Promote social justice in all aspects of schooling. | V | .475 | | | |
| Safeguard the values of democracy, equity, and diversity. | V | .472 | | | |
| Ensure that individual student needs inform all aspects of schooling. | V | .426 | | | |
| Model principles of self-awareness. | V | .412 | | | |
| Nurture and sustain a culture of collaboration. | II | | .528 | | |
| Develop the capacity for distributed leadership. | III | | .527 | | |
| Model principles of reflective practice. | V | | .519 | | |
| Model principles of transparency. | V | | .442 | | |
| Develop the leadership capacity of staff. | II | | .432 | | |
| Evaluate the management and operational systems. | III | | | .651 | |
| Monitor the management and operational systems. | III | | | .602 | |
| Obtain, allocate, utilize and efficiently utilize fiscal resources. | III | | | .563 | |
| Obtain, allocate, align, and efficiently utilize technological resources. | III | | | .543 | |
| Build positive relationships with families and caregivers. | IV | | | | .697 |
| Sustain positive relationships with families and caregivers. | IV | | | | .661 |

Further analysis was carried out dropping the 21 items that showed poor correlations with their factors. Once again, the principal axis extraction was used with a varimax rotation forcing the data to yield 6 factors. The KMO and Bartlett's test once again provided similar results (KMO = .846 & Bartlett's test of Sphericity sig. = .000). With the initial solution, the total variance explained by the six factor model was 52.42% as compared to 43.73% in the first analysis. The rotated sums of squared leadings after the rotation also showed an increase in the common variance (45.52%) explained by the six factors. The variances associated with each of the unrotated and rotated factors are presented in Table 5.

Table 5

*Final Principal Axis Factor Analysis with 45 Items: Total Variance Explained*

| Factor | Initial Eigen values | | Rotation Sums of Squared Loadings | |
|---|---|---|---|---|
| | % of Variance | Cumulative % | % of Variance | Cumulative % |
| 1 | 27.897 | 27.897 | 10.710 | 10.710 |
| 2 | 7.031 | 34.928 | 7.961 | 18.671 |
| 3 | 5.445 | 40.374 | 7.847 | 26.518 |
| 4 | 4.454 | 44.828 | 7.166 | 33.683 |
| 5 | 3.954 | 48.781 | 6.000 | 39.683 |
| 6 | 3.639 | 52.420 | 5.836 | 45.520 |

Tables 6 & 7 illustrate the final factor model, which consists of six factors and their respective factor loadings after the varimax rotation. Factor 1 now constituted 13 items from Standards I through V. However 8 of these items were from Standards I & III addressing school plans, progress, educational environment and student instruction and learning. Hence, the central theme of this factor was *school instructional capacity and student learning*. The factor loadings ranged from .640 to .427. The items in this factor were similar to factor 2 in the initial analysis.

The second factor consisted of 9 items of which 7 were from Standard V and 2 from Standard VI. The main focus of this factor was dealing with *moral and ethical issues*. The factor loadings ranged from .669 to .409. This mirrored the 3rd factor from the initial analysis (see Table 6).

Table 6

*Final Factor Model - Factors 1 & 2 with Factor Loadings*

| Item | Standard | Factors | |
|---|---|---|---|
| | | 1 | 2 |
| Evaluate a school's progress and revise plans accordingly. | I | .640 | |
| Ensure a system of accountability for every student's academic success. | V | .586 | |
| Ensure teacher time is focused to support student learning. | III | .578 | |
| Monitor the impact of the instructional program. | II | .575 | |
| Evaluate the impact of the instructional program. | II | .570 | |
| Monitor a school's progress and revise plans accordingly. | I | .566 | |
| Ensure teacher time is focused to support quality instruction. | III | .552 | |
| Develop assessment and accountability systems to monitor student progress. | II | .495 | |
| Collect data and information pertinent to the educational environment. | IV | .492 | |
| Ensure organizational time is focused to support student learning. | III | .454 | |
| Implement a plan to achieve the school's goals. | I | .453 | |
| Ensure organizational time is focused to support quality instruction. | III | .447 | |
| Collect and use data to identify school goals. | I | .427 | |
| Evaluate the potential legal consequences of decision-making. | V | | .669 |
| Evaluate the potential moral consequences of decision-making. | V | | .660 |
| Consider the potential legal consequences of decision-making. | V | | .660 |
| Consider the potential moral consequences of decision-making. | V | | .591 |
| Promote social justice in all aspects of schooling. | V | | .484 |
| Ensure that individual student needs inform all aspects of schooling. | V | | .460 |
| Be an advocate for families and caregivers. | VI | | .440 |

Factor 3 was comprised of five items (see Table 7). The factor loadings spanned from .701 to .404. Out of the five, four items were from Standard IV and dealt with promoting, understanding and utilizing community's diverse intellectual, social and cultural resources. Only one item was from Standard VI that addressed leadership strategies. The distinct and unifying idea of this factor was *community and social resources.*

Four items made up the $4^{th}$ factor. All the four items were from Standard III. These items dealt with evaluating and monitoring the management and operational systems as well as obtaining and utilizing resources. All the factor loadings were .60 and above. The central theme of this factor was *operational*

*management and organizational structures.*

Factor 5 was represented by 4 items. Three items such as modeling principles of reflective practice, transparency and self-awareness were from Standard V, while one item was from Standard III that dealt with distributed leadership. This factor represents the dimension of *servant leadership.*

Four items constituted factor 6. The unifying theme of factor 6 was *community and family relationships.* This involved building and sustaining positive relationships with not only family/caregivers but also with the community partners. All the items in factor 6 were from Standard IV and the factor loadings were .580, .601, .693 & .719. Displayed in Tables 6 & 7 is the final factor model, which comprised 39 items overall. Six additional items that exhibited lower correlations with their factors were excluded from the final factor model, of which four were from Standard II, and 2 from Standard VI.

Table 7

*Final Factor Model – Factors 3, 4, 5 & 6 with Factor Loadings*

| Item | Standard | Factors | | | |
|---|---|---|---|---|---|
| | | 3 | 4 | 5 | 6 |
| Promote understanding, appreciation, and use of the community's diverse intellectual resources. | IV | .701 | | | |
| Promote understanding, appreciation, and use of the community's diverse cultural resources. | IV | .701 | | | |
| Promote understanding, appreciation, and use of the community's diverse social resources. | IV | .667 | | | |
| Analyze data and information pertinent to the educational environment. | IV | .483 | | | |
| Anticipate emerging trends and initiatives in order to adapt leadership strategies. | VI | .404 | | | |
| Evaluate the management and operational systems. | III | | .692 | | |
| Monitor the management and operational systems. | III | | .639 | | |
| Obtain, allocate, align, and efficiently utilize technological resources. | III | | .616 | | |
| Obtain, allocate, utilize and efficiently utilize fiscal resources. | III | | .604 | | |
| Model principles of reflective practice. | V | | | .572 | |
| Model principles of transparency. | V | | | .552 | |
| Model principles of self-awareness. | V | | | .476 | |
| Develop the capacity for distributed leadership. | III | | | .450 | |
| Build positive relationships with families and caregivers. | IV | | | | .719 |
| Sustain positive relationships with families and caregivers. | IV | | | | .693 |
| Build productive relationships with community partners. | IV | | | | .601 |
| Sustain productive relationships with community partners. | IV | | | | .580 |

## 5 Conclusions and Discussion

These findings confirm the construct validity of Standards III, IV and V much more than that of Standards I, II and VI. It is important to note here that all the "functions" from Standard IV (Community) were retained by the factor analysis. However, Standard IV exhibited 2 dimensions, one dealing with community resources and the other with family and community relationships. Similarly, Standard V was also split into two distinct factors, one dealing with the ethical and moral issues, while the other with leadership issues. Only two of the elements from this Standard were excluded from the final model. Although Standard III also showed two dimensions, they were not as distinct as the others mentioned above. Only one factor was distinct, which dealt with managing operational and organizational structures, while the other focused on the instructional capacity that was intertwined with student learning. Items from Standards I & II were integrated into Factor 1 whose theme was instructional capacity and student learning.

Since 27 survey items were eliminated from the final model, the next logical question is what were the "functions" associated with these items? The analysis revealed that 18 "functions" were eliminated in whole or in part (see Table 8) by the factor analysis. There were four "functions" from Standard I, seven from Standard II, two from Standard III, two from Standard V and three from Standard VI that were impacted overall. These results suggest that these functions provide redundant information that may not add value to the overall Standards and begs the question as to whether there is need for a reorganization of these "functions?"

Table 8

*ISLLC 2008 "functions" Eliminated through Exploratory Factor Analysis*

| ISLLC 2008 Standard | Eliminated "Functions" (whole or *in part*) |
|---|---|
| I | A) Collaboratively develop and implement a shared vision and mission.<br>B) *Collect and use data to assess organizational effectiveness and promote organizational learning.(In part)*<br>C) *Create plans to achieve goals.(In part)*<br>D) Promote continuous and sustainable improvement. |
| II | A) Nurture and sustain a culture of collaboration, trust, learning, and higher expectations.<br>B) Create a comprehensive, rigorous, and coherent curricular program.<br>C) Create a personalized and motivating learning environment for students.<br>D) Supervise instruction.<br>F) Develop the instructional and leadership capacity of staff.<br>G) Maximize time spent on quality instruction<br>H) Promote the use of the most effective and appropriate technologies to support teaching and learning. |
| III | B) *Obtain, allocate, align, and efficiently utilize human resources. (In part)* |
| IV | C) Promote and protect the welfare and safety of students and staff.<br>None |
| V | A) *Ensure a system of accountability for every student's social success. (In part)* |
| VI | B) *Model principles of ethical behaviour. (In part)*<br>A) *Advocate for children. (In part)*<br>B) *Act to influence state and national decisions affecting student learning. (In part)*<br>C) *Assess and analyze emerging trends and initiatives in order to adapt leadership strategies. (In part)* |

Particularly interesting is almost the entire elimination of the relevant "functions" for Standard II (Instruction). On the surface, this result may appear anomalous; however, an in depth look at the factors reveals that what has been eliminated is not Standard II but the redundancy of the Standard II "functions,"

which have been subsumed under other factors. Since the oversight and facilitation of classroom instruction and student learning is at the core of what principals should be doing on a daily basis (Iwanicki 1999; NAESP 2001), it only stands to reason that this primary responsibility is inherent in each of the Standards. The results here seem to indicate that when all six of the standards were formulated, the essential constructs of classroom instruction and student learning were embedded within each and every one of them. Therefore, the data reduction method has eliminated the apparent need for a separate construct for instruction by eliminating the redundancy of this construct across standards.

Consequently, this factor analysis of the ISLLC Standards' "functions" brings a new perspective to the ISLLC standards in total and quite possibly suggests a new look at these standards from the perspective of the practice of leadership. It could be suggested that this factor analysis uncovered the core tenets of ISLLC as previously discussed by Murphy, Yff and Shipman (2000) and the "evolving conception of leadership" (p. 18). To review, Murphy et al (2000) proposed four leadership roles that the 21st century principal needs to be adept at; 1) "the leader as community servant" (p.19); "the leader as organizational architect" (p.19), 3) "the leader as social architect" (p.20) and 4) "the leader as moral educator" (p.21).

Table 9 posits a model inclusive of these leadership roles when cross-matched to current ISLLC 2008 Standards and the suggested constructs identified by the factor analysis carried out in this study.

Table 9

*Cross-matched Leadership Roles*

| Factor | Factor Analyses Suggested Constructs | Correlating ISLLC Standards | Murphy et al (2000) Constructs |
|---|---|---|---|
| 1 | School Instructional Capacity and Student Learning | Standards I, II & III | Leader as Moral Educator<br>Leader as Organizational Architect |
| 2 | Moral & Ethical Issues | Standard V | Leader as Moral Educator |
| 3 | Community and Social Resources | Standards IV & VI | Leader as Social Architect |
| 4 | Operational Management & Organizational Structures | Standard III | Leader as Organizational Architect |
| 5 | Servant Leadership | Standard III & V | Leader as Moral Educator<br>Leader as Social Architect |
| 6 | Community & Family Relationships | Standard IV | Leader as Community Servant |

At the very least, what this analysis might suggest to the field of educational leadership preparation and practice is that the ISLLC 2008 Standards do support a multi-dimensional conceptual framework for leadership, specifically, the framework that Murphy et al (2000) suggested as is illustrated in Table 9. However, our findings also seem to suggest that the emphasis placed on the standards and their "functions" and measured by specific criterion benchmark assessments for the purposes of both the preparation and accreditation of future school leaders might be misguided due to the level of redundancy across all of the Standards' "functions."

Obviously, due to the small sample size, these suggestions are only offered as points for discussion. However, the results found here do advocate further study on the construct validity of the ISLLC 2008 Standards. We would also like to posit that the results found here could perhaps insinuate that we need to take a step back from the current accountability and standards obsession to ask ourselves, "What core values and knowledge should the school leaders of tomorrow's schools possess?" We suggest that it might be as simple as what Murphy et al identified in 2000 and any attempt to "micro-script" a set of specific functions and standards might just be an exercise where we miss "see[ing] the forest for the trees."

## 6 References


Babo, G. & Ramaswami, S. (2011a). A hierarchy of application of the ISLLC 2008 Standards' "functions" to principal evaluation: A national study. *AASA Journal of Scholarship &Practice, 8* (2), 26-37.

Babo, G. & Ramaswami, S. (2011b). Principal evaluation and the application of the ISLLC 2008 Standards' 'functions' by school superintendents: A national study. *International Studies in Educational Administration, 39*(3), 77-90.

Branch, G.F., Hanushek, E.A. & Rivkin, S.G. (2012). *Estimating the effect of leaders on public sector productivity: The case of school principals.* Cambridge, MA: National Bureau ofEconomic Research.

Council of Chief State School Officers Standards for School Leaders. (1996)Retrieved March 10, 2004, from http://www.ccsso.org/Projects/interstate_school_leaders_licensure_consortium/561.cfm"

Council of Chief State School Officers (CCSSO). (2008). *Educational Leadership Policy Standards: ISLLC 2008.* Washington, DC: Author

Creighton, T. & Wilmore, E. (2003). Conversation with Fenwick English: Standards without standardization. *NCPEA Education Leadership Review, 4*(1), 33-36.

Derrington, M. L., & Sharratt, G. (2008). Evaluation of principals using Interstate School Leaders Licensure Consortium (ISLLC) Standards. *Journal of Scholarship & Practice, 5* (3), 20 – 29.

English, F. (2005). *Educational leadership for sale: Social justice, the ISLLC Standards, and the corporate assault on public schools.* Retrieved on April 9, 2009 from http://cnx.org/content/m12868/1.3/8englishsmall.pdf

English, F. (2006). The unintended consequences of a standardized knowledge base in advancing educational leadership preparation. *Educational Administration Quarterly, 42* (3), 461 – 472.

ETS.org. (2011). *Frequently asked questions about the School Leadership Series (SLS).* Retrieved June 22, 2011 from http://www.ets.org/portal/site/ets/menuitem.1488512ecfd5b8849a77b13bc3921509/?vgnextoid=ff8cc1b1

High, R. & Achilles, C.M. (1986). An analysis of influence-gaining behaviors of principals in schools of varying levels of instructional effectiveness. *Educational Administration Quarterly 22* (1), Winter 1986, 111 – 119.

Hemmen, J., Edmonson, S., & Slate, J. (2009, May 10). *Standards for School Leadership Programs: A Conceptual Analysis.* Retrieved from the Connexions Web site: http://cnx.org/content/m22064/1.2/

Hutcheson, G. & Sofroniou, N. (1999). *The multivariate social scientist: Introductory statistics using generalized linear models.* Thousand Oaks, CA: Sage Publications.

Iwanicki, E. F. (1999). ISLLC Standards and assessment in the context of school leadership reform. *Journal of Personnel Evaluation in Education, 13* (3), 283-294.

Kaplan, L.S., Owings, W.A., & Nunnery, J. (2005). Principal quality: A Virginia study connecting Interstate School Leaders Licensure Consortium Standards with student achievement. *NASSP Bulletin, 89* (643), June 2005, 28 – 44.

Liethwood, K., Louis, K.S., Anderson, S. & Wahlstrom, K. (2004). *How leadership influences student learning.* Center for Applied Research and Educational Improvement and Ontario Institute for Studies in Education at the University of Toronto.

Lindle, C., Stalion, N. & Young, L. (2004, November). *Content validity of the Interstate School Leaders Licensure Consortium's (ISLLC) Standards for school leaders: To what extent do ISLLC skill indicators describe school leaders' instructional leadership work?* A paper presented at the annual convention of the University Council for EducationalAdministration (UCEA), Kansas City, MO.

Murphy, J. (2003, September). *Restructuring Educational Leadership: The ISLLC Standards Ten Years Out.* Paper prepared for the National Policy Board for Educational Administration.

Murphy, J. (2005). Unpacking the foundations of ISLLC Standards and addressing concerns in the academic community. *Educational Administration Quarterly, 41*(1), 154-191.

Murphy, J. & Shipman, N. (1999). The Interstate School Leaders Licensure Consortium: A standards based approach to strengthening educational leadership. *Journal of Personnel Evaluation in Education, 13* (3), 205 – 224.

Murphy, J., Yff, J. & Shipman, N. (2000). Implementation of the Interstate School Leaders Licensure

Consortium Standards. *International Journal of Leadership in Education, 3*(1), 17-39.
National Association of Elementary School Principals (2001). *Leading learning communities: NAESP Standards for what principals should know and be able to do.* Alexandria, VA: NAESP.
Portin, B.S., Feldman, S. & Knapp, M.S. (2006). *Purposes, uses, and practices of leadership assessment in education.* Commissioned by The Wallace Foundation. Seattle, WA: The University of Washington Center for the Study of Teaching and Policy.
Waters, T. & Kingston, S. (2005). The standards we need. *Leadership, 35* (1), 14 – 16, 36 – 39.