Validation of the Synergistic Leadership Theory

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Abstract: In the past, leadership theories in education and business management were based largely upon the experiences of white males. As a consequence, the female point of view and experience are excluded. The synergistic leadership theory (SLT) (Irby, Brown, & Duffy, 1999), that addresses the female perspective and includes attributes, experiences, and abilities inherent in male, as well as female leaders, is accompanied with the Organizational and Leadership Effectiveness Inventory (OLEI). In this article, we employed quantitative data that were gathered from the OLEI. Two confirmatory factor analyses were conducted to validate the alignment of the constructs of the SLT with the OLEI.

Validation of the Synergistic Leadership Theory

Over the past 20 years, researchers have pointed out concerns related to leadership theories in education and business management. Specifically, these theories traditionally: (a) were based largely upon the experiences of white males (Blackmore, 1989; Capper, 1993; Glazer, 1991); (b) were based on theories from a corporate or military setting (Gossetti & Rusch, 1995); (c) were written using the masculine voice; (d) were validated using male participants, (e) have projected a male or androcentric bias (Irby, Brown, & Trautman, 1999), (f) included gender bias language (Shakeshaft, 1989), and (g) excluded the female experience (Irby & Brown, 1995).

In 1995, Brown and Irby echoed a 1984 challenge issued by Shakeshaft and Nowell (1984) and "averred that true reform in administrative preparation programs will not occur unless current theory is reevaluated and revaluated. The term 'reevaluated,' deals with the technical examination of the subject; while the term, 'revaluated,' refers to an examination of deep, personal value systems" (Brown & Irby, 1995, p. 41). They indicated that "the current theories taught in administrative preparation programs are negatively impacting the field because they:

(a) do not reflect currently advocated leadership practice; (b) do not address the concerns, needs, or realities of women; (c) perpetuate the barriers that women encounter; and (d) do not prepare women or men to create and work effectively in inclusive systems" (p. 42-43).

Grogan (1999) suggested that new conceptions of leadership theories are needed because current leadership theories have contributed to gender inequities. She stated, "it is reasonable to imagine that because women's lived experiences as leaders are different from men's, new theoretical understanding of a leadership that is premised on social justice might emerge" (p.533).

McCarthy (1999) noted that educational administration programs have focused the study of leadership on traditional theories and understandings of how school should be led and that the ways that women might lead are not included. Young and McLeod (2001) warned, "exposing our students solely to traditional leadership literature [including leadership theories] essentially legitimizes traditionally male behavior and perspectives and delegitimizes the behavior and perspectives of women" (p. 491). Irby, Brown, Duffy, and Trautman (2002) stated, "male-based leadership theories advanced in coursework, texts, and discussion perpetuate barriers that women leaders encounter" (p. 306). Additionally, Young and McLeod (2001) found that "exposure to nontraditional leadership styles is a key element in facilitating women's paths into administration" (p. 491).

According to Shakeshaft, Brown, Irby, Grogan, and Ballenger (2007), since the publication of the initial *Handbook of Sex Equity in Schools* (Klien, 1985*)*, several leadership concepts and/or leadership or organizational theories have either addressed female styles directly or have described leadership approaches that are consistent with research on women: (a) interactive leadership (Rosener, 1990); (b) caring leadership (Grogan, 1998, 2000); (c) relational

leadership (Reagan & Brooks, 1995); (d) power-shared leadership (Brunner, 1995, 1999; Brunner & Duncan, 1998); (e) learning focused leadership (Beck & Murphy, 1996); and (f) authentic, moral, servant, or value-added leadership (Covey, 1990; Sergiovanni, 1990, 1992, 1994). Additionally, the synergistic leadership (Irby, et al., 2002) is intentionally to be inclusive of the female voice and experience.

Rosener (1990) offered "interactive" leadership as a style that encourages participation and shared power among all employees regardless of gender. Her research included both the male and female perspective in management styles. Females tended to have this behavior imprinted from childhood and were more social as compared to males (Rosener, 1990). Sharing professional and personal information with others helped to create cohesive teams, and employees were able to self-motivate each other in the workplace (Rosener, 1990). She interviewed females and found that many of the participants indicated that having interpersonal relations with co-workers was a natural part of their workday (Rosener, 1990).

The practice of caring leadership is that leaders care about people. Grogan (1998) believed that the maternal qualities exhibited by women at home are transferred to the workplace. She found that female leaders worked well with students, parents, teachers, and community members. Female leaders valued collaboration, personal input, family obligations, were more sensitive to a teacher's schedule, and were able to combine professional and personal dialogue in the workplace.

Relational leadership was defined by Reagan & Brooks (1995) as an integrative form of leadership created through the seamless integration of both the masculinist and feminist attributes of leadership. The model of leadership drawn out of the women leaders' experience has convinced them the attributes that most women bring to leadership are inherently different

from those practiced by most men leaders. The five feminist attributes of leadership they have

described include collaboration, caring, courage, intuition, and vision. These attributes reflect

feminine experiences of relational leadership.

Brunner (1995, 1999) studied "Power to" or Power-shared" leadership and found there

was a difference in how each powerful, successful male and female leader described power.

Females defined power as collaboration, working together, non-hierarchical, consensus building,

and "power to" or "power-shared." A "power to" or "power-shared" leader is comfortable

relinquishing power or empowering others to lead the organization in achieving common goals

(Brunner, 1999; Brunner & Duncan, 1998). On the other hand, Brunner (1995) found that most

males described power as the person in charge, decision-maker, and confrontational if necessary.

Males who defined power as the females had believed that they practiced a more feminine

leadership style. Research concluded that females adhered to collaboration, inclusion, team

building, and the "power to" or "power-shared" leader concept (Brunner, 1999; Brunner &

Duncan, 1998).

According to learning focused leadership, leadership has been identified as one of the

four imperatives of a successful school and the key factor in rebuilding and reculturing schools

in the form of communities. The learning focused leaders help others assume the mantle of

leadership through pushing leadership outward to students, parents, and staff. They facilitate the

building of powerful connections between adults and youngsters by engaging families and other

community members in the service of school goals, the learning agenda, and student

performance (Beck & Murphy, 1996).

In discussion of value-added leadership, Covey (1990) referred to values as a road map

that guided leaders to make the right decisions. Likewise, these maps should be congruent to

personal paradigms and should align with principles and laws. Value-added leaders impact the

employees personally and interpersonally more than anything else within the organization

(Covey, 1990; Deth & Scarbrough, 1995). Sergiovanni (1990, 1992, & 1994) proposed four

stages of value-added leadership. First, a leader should lead by bartering, offering something in

exchange for something else because exchange is satisfying to both parties. Second, positive

work environments should be created where employees are able to build relationships and reach

their individual goals. Third, a strong emphasis should be placed on the importance of leaders

working together as a team to propose and develop new goals while at the same time increasing

the value of their role. Finally, organizations are more likely to prosper when leaders are

provided with the appropriate resources and means to ensure quality work.

The synergistic leadership theory (SLT), developed by Irby, Brown, and Duffy (1999), is

a gender inclusive theory which addresses the female perspective and which includes attributes,

experiences, and abilities inherent in male, as well as female, leaders. The purpose of this study

was to validate the alignment of the constructs of the SLT with the Organizational and

Leadership Effectiveness Inventory (OLEI). [1]

Theoretical Framework

The theory development for the SLT began in 1995 with an examination of leadership

theories traditionally taught in administrative and management courses (Irby, Brown, & Duffy,

1999). The analysis focused on the origins, development, and content of the theories themselves.

Existing theories were analyzed for: (a) the inclusion of the female experience and attitudes, (b)

[1] Footnote

[1] In order to avoid confusion with the factor analysis, we use the term *constructs* instead of *factors* in the SLT model.

gender as a significant variable in development of the theory, (c) females in the sample

populations, (d) use of non-sexist language, and (e) generalizabilty of the theory to both male

and female leaders (Brown, Irby, & Trautman, 1999; Irby, et al., 2002). Findings of the research

indicated that existing leadership theories were written from the male perspective but applied to

both male and female leaders (Brown, et al., 1999; Shakeshaft, 1986). Therefore, a leadership

theory that included the female perspective in its development and content was necessary

(Brown & Irby, 1995; Gossetti & Rusch, 1995; Brown, et al., 1999; Shakeshaft, 1989).

In 1995, Irby, Brown, and Duffy began to conduct a three-phase study to examine

existing leadership theories and leadership characteristics. Developed by female researchers,

utilizing a female sample, and including the feminine perspective (Irby, Brown, & Duffy, 1999),

the synergistic leadership theory made the following assumptions:

1. Leadership is the interaction among leadership behavior, organizational structure,

external forces, and values, attitudes, and beliefs.

2. Women bring a particular set of leadership behaviors to leadership positions.

3. No theory/model exists in current literature that is all inclusive of feminine leadership

characteristics or women's perspectives (Trautman, 2000).

A tetrahedral model (see Figure 1 at end of article) for the SLT was constructed around

the four constructs: (a) values, attitudes, and beliefs, (b) leadership behaviors, (c) external forces

and (d) organizational structures (Irby, Brown, & Duffy, 2000). In the SLT, attitudes, beliefs,

and values are the foundation for guiding principals that "apply at all times in all places" (Covey,

1992). As shown on the model in Figure 1, attitudes, beliefs, and values are depicted as

dichotomous, as an individual or group would either adhere or not adhere to specific attitudes,

beliefs, or values at a certain point in time. They are manifested in actions, such as valuing

professional growth, being open to change, and valuing diversity and integrity. Beliefs can change as new information is processed, while attitudes and values are more enduring (Irby, et al., 2002).

Leadership behavior is depicted as a range of behaviors from autocratic to nurturer. Leadership behaviors include both behaviors that are commonly associated with males, and those that are commonly associated with females. For example, leadership behaviors that are traditionally associated with male leaders are self-assertion, separation, independence, control, and competition. Behaviors that are ascribed to female leaders are interdependence, cooperation, receptivity, merging, acceptance, being aware of patterns, wholes, and context (Irby, et al., 2002).

External forces, as depicted in the model, are those influencers outside the control of the organization or the leader that interact with the organization and the leader and that inherently embody a set of values, attitudes and beliefs. They may include: (a) local, national, and international community and conditions, (b) governmental regulations or laws, (c) demographics, (d) cultural and political climate, (e) technological advances, (f) economic situations, and (e) policy-making boards or councils.

Organizational structure refers to the characteristics of organizations and how they operate. The SLT model (Figure 1) depicts organizational structures as ranging from open, feminist originations to tightly bureaucratic ones. For example, bureaucratic organizations are characterized by division of labor, rules, hierarchy of authority, impersonality, competence; while feminist organizations feature participative decision making, systems of rotating leadership, promotion of community and cooperation, and power sharing.

The SLT creates a framework for describing interactions and dynamic tensions among the four constructs of the SLT, leadership behaviors, organizational structure, external forces, and attitudes and beliefs, with focus on the interconnectedness of the four constructs. As with the tetrahedron, all four constructs of the theory are considered equal and interactive, rather than linear (Irby, Brown, & Trautman, 2000). Tension between even two of the constructs can negatively impact the perceived effectiveness of the leader or organization.

Six aspects particular to the SLT are: (a) female leaders were included in its development; (b) female leaders may be impacted by external forces, organizational structures or values, attitudes, and beliefs in ways male leaders are not, and visa versa; (c) female leadership behaviors may interact with the constructs of the SLT in ways unlike the leadership behaviors of males; (d) the theory acknowledges a range of behaviors and organizational structures inclusive to those considered "feminine;" (e) leaders at various positions or levels (i.e., teacher leaders to superintendents) may be impacted by the constructs of the model in different ways; and (f) the interaction of the constructs can cause harmony or tension for the educational leader (Irby, et al., 2002).

Trautman (2000) employed qualitative and/or quantitative data to validate the leadership behavior factor of the synergistic leadership theory as well as the interaction of all four constructs. Her study concluded:

1. The leadership behavior factor of the synergistic leadership theory acknowledged a range of male and female leadership behaviors suggesting validity and meaning for both males and females.

2. Male and female leaders confirmed that all four constructs of the synergistic leadership theory interact in relevant and meaningful ways.

3. Female leaders at different levels found the theory to be relevant. Additionally, female leaders validated the assumption of the synergistic leadership theory that females at different levels of management may perceive the interactions among the constructs of the synergistic leadership theory to vary.

4. The synergistic leadership theory provides inclusive feminine leadership behaviors drawn from research and the female perspective (Trautman, 2000, p. 153-154).

An administrative theory systematically organizes information and knowledge, and helps to analyze, predict, or explain the specific nature or behavior of people and their organization (Drake & Roe, 1994). This clear systematic description and organization of ideas makes it possible to present a theory that can be systematically tested, and from which predictions can be derived. The SLT was developed using these principles for valid theory development.

Methodology

Our methodology used quantitative data that were gathered from the OLEI to conduct two confirmatory factor analyses. A confirmatory factor analysis was performed to measure the large number of variables in one single set and to reduce the number of variables by combining the variables that are highly correlated with each other (Gall, Borg, & Gall, 1996). As a result, each set of combined variables becomes a factor.

Research Questions

Quantitative data were collected through the Organizational and Leadership Effectiveness Inventory to answer the following research questions:

1. To what extent do the data from the Organizational and Leadership Effectiveness Inventory align with the four constructs presented in the synergistic leadership theory?

2. What factors can be identified from the Organizational and Leadership Effectiveness

    Inventory?

Population and Sample

The target population of this study included all 103,193 public school superintendents,

assistant superintendents, secondary principals (grades 6-12), and elementary principals (grades

K-5) in the United States. Market Data Retrieval Company, a company of the Dunn and

Bradstreet Corporation (2000) was enlisted to supply the target population for each sub-group.

The sub-groups were as follows: 11,542 male (11.2%) and 2,060 female (2%) superintendents;

4,269 male (4.1%) and 2,267 female (2.2%) assistant superintendents; 24,591 male (24%) and

29,305 female (28.5%) elementary principals; and 21,230 male (21%) and 7,020 female (7%)

secondary principals. Gall, Borg, and Gall (1996) recommended a sample size of 384 when the

population is 100,000 at the .05 level of significance.

A stratified random sample taken from the population of 103,193 included 800

educational leaders selected by Market Data Retrieval Company. Huck and Cormier (1996)

defined a stratified random sample as one in which the population has been divided into

subgroups, with a random sample then selected from each subgroup.

According to Gall, Borg, and Gall (1996) for a small effect size with a .05 level of

significance 384 participants is recommended. A total of 277 participants is recommended at the

.10 level of significance. To approximate these recommendations, a follow-up study was

necessary using the same population and instrument for a small effect size (Gall, et al., 1996).

The total number of participants that returned the instrument for this study was 374, effectively

approximating the recommended sample size.

Instrumentation

The instrument used in this study was the Organizational and Leadership Effectiveness Inventory, which was developed by Irby, Brown, and Duffy (2000). The OLEI had six parts with a total of 96 items. Participants recorded their responses on a Likert-type scale ranging from strong disagreement to strong agreement. The OLEI was piloted with female leaders employed as public school administrators to check for agreement with 34 different female leadership characteristics. Additionally, to establish face validity and content validity, it was reviewed by an expert group of university professors in educational leadership and university professors in marketing management across the United States.

All four constructs of the synergistic leadership theory were addressed in the inventory, along with a demographic section. In section one, participants rated philosophical beliefs and principles about themselves and about their supervisors on a scale of one-to-four. In section two, participants were required to rate their own leadership behaviors among the 64 given on a scale of one to four. Section three provided the participants an opportunity to rate their leadership effectiveness from disagreement to agreement with six different statements also on a scale of one to four. In section four, participants responded to the ten organizational characteristics that applied to their organization as perceived by themselves and their supervisor. Participants again indicated their responses on a scale of one-to-four. Section five asked participants to rate statements that addressed organizational structure. Participants responded by placing their organization on a continuum of one-to-four. In section six, participants were asked to complete demographic information regarding ethnicity, gender, management level, and years of experience in present position.

Reliability and validity. The OLEI is a researcher-developed inventory adapted from a prior study (Brown, et al., 1999). To establish reliability, we employed a Cronbach's analysis,

which yielded α = .9045 for internal consistency. Additionally, a Cronbach's alpha reliability

coefficient was calculated for each factor of the OLEI (Table 1), which included: values,

attitudes, and beliefs, external forces, leadership behaviors, and organizational structures.

Construct validity was established by: (a) validating the construct by proving interactive

relationships between the constructs within the instrument and the constructs of the theory, and

(b) performing a confirmatory factor analysis on the original instrument and an additional factor

analysis of the proposed instrument (Crocker & Algina, 1986; Hopkins, 1998; Huck & Cormier,

1996; Suter, 1998; Wiersma, 2000).

Table 1

Cronbach's Alpha for the Four Constructs of the SLT as Measured on the Organizational and
Leadership Effectiveness Inventory

Scale	α
Values, Attitudes, and Beliefs	.76
External Factors	.83
Leadership Behaviors	.87
Organizational Structure	.67

Data Collection and Analysis

Market Data Retrieval Company (2000) provided address labels from a random sample of

800 public school administrators in the United States. A total of 374 inventories were returned

and results were input into SPSS.

The first research question, "To what extent do the data from the Organizational and Leadership Effectiveness Inventory align with the four constructs presented in the synergistic leadership theory?", was answered using a four-factor confirmatory factor analysis with a varimax rotation to determine if the constructs from the data collected on the OLEI aligned with the constructs of the SLT as proposed by the authors of the theory. Data were analyzed by entering all information from the inventory into SPSS for evaluation. This analysis was conducted to describe a group of constructs that can be compared or correlated with other constructs or dimensions of a theory (Child, 1970).

The second research question was: "What factors can be identified from the Organizational and Leadership Effectiveness Inventory?" To answer this question, another factor analysis was performed to examine a five-factor loading that statistically better explained the variance. Items that did not load on the confirmatory factor analysis were omitted, and statements were rearranged according to the confirmatory factor loadings.

Findings and Discussions

Demographic Results

Demographic information was obtained from 374 public school administrators who responded to the OLEI. The responding educational administrators in the current study were 45.2% male (191) and 51.1% female (169). By ethnicity, the majority of respondents were Anglo, 83.2%. The remaining participants were African-American 7.5%; Hispanic 2.1%, Asian/Pacific Islander .5%, Native American 1.6%, and missing information accounted for 5.1%. The data reflected the demographics of the public school administrators in the United States (Marcoux, 2000).

In our study, management levels (Table 2) of respondents were divided as follows: 24.1% superintendents, 27.3% assistant superintendents, 20.3% secondary principals, 25.1% elementary principals, and 3.2% missing. Administrators with 1-3 years of experience in present position accounted for 29.7% of the respondents, 4-6 years of experience in present position was 17.9%, 7-9 years of experience in present position 13.1%, 10-12 years of experience in present position 8.6%, 16-18 years of experience in present position 23.0%, and missing information 1.1%.

Table 2

Population Characteristics for Organizational and Leadership Effectiveness Respondents

Variable	Number	Percent
Gender		
Female	169	45.2
Male	191	51.1
Missing	14	3.7
Ethnicity		
Anglo	311	83.2
African American	28	7.5
Hispanic	8	2.1
Asian/Pacific Islander	2	.5
Native American	6	1.6
Missing	19	5.1
Management Level		
Superintendent	90	24.1
Assistant Superintendent	102	27.3
Secondary Principal	76	20.3
Elementary Principal	94	25.1
Missing	12	3.2
Years of Experience in Present Position		
1-3	111	29.7
4-6	67	17.9

7-9	49	13.1
10-12	32	8.6
13-15	25	6.7
16-18 plus	86	23.0
Missing	4	1.0

Note. n = 374

The Organizational and Leadership Effectiveness Inventory Alignment with the Four Constructs

of the Synergistic Leadership Theory

To determine whether the items of the OLEI aligned with the four constructs presented in

the SLT model, we used a confirmatory factor analysis with varimax rotation with a four-factor

solution. The purpose of a confirmatory analysis is to determine the factor model for a set of

variables (Stevens, 1996). The confirmatory factor analysis model can explain 28% of the

variance of the SLT model. The original model proposed by Irby and Brown, as presented in

Table 3, did not best fit the data. Although it was determined that a loading of .27 would be

statistically significant for the study's given sample size (Stevens, 1996), it was determined in

this current study that only loadings of .35 or greater would be retained to guarantee a minimum

of 10% shared variance with the factor. The following items did not load: (a) adherence to

tradition - Supervisor, (b) views teachers as leaders - Supervisor, (c) adherence to tradition - Self,

(d) external environment, (e) mentor persistent, (f) community builder, (g) controlling, (h)

prefers routine and stability, (i) delegating, (j) strong need for power, (k) resourceful, (l) tolerant

of stress, (m) compliant, (n) tolerance for ambiguity, and (o) impulsive. Table 3 presents the item

loadings of the four-factor analysis. Bold items met the criteria described above.

Table 3

Item Loadings on Four Factors of the Organizational and Leadership Effectiveness Inventory

| | Factors | | | |
Item	I	II	III	IV
Values, Attitudes, and Beliefs				
1a. Emphasis on Professional Growth - Supervisor	.30	.15	.03	**.50**
2a. Openness to change/diversity - Supervisor	-.06	.24	.20	**.36**
3a. Adherence to tradition - Supervisor	.33	-.05	-.07	.07
4a. Emphasis on collegiality - Supervisor	.09	.11	.29	**.36**
5a. Emphasis on character, ethics, integrity - Supervisor	.06	.21	.14	**.47**
6a. Importance of programs for at-risk students - Supervisor	.05	.25	.25	**.46**
7a. Emphasis on innovation - Supervisor	.03	.22	.24	**.38**
8a. Views teachers as leaders - Supervisor	.17	-.03	.30	.33
9a. Emphasis on reflective practice - Supervisor	.07	.16	.22	**.39**
1b. Emphasis on Professional Growth - Self	.09	.24	.11	**.38**
2b. Openness to change/diversity - Self	.22	.08	.05	**.58**
3b. Adherence to tradition - Self	.10	.03	.04	-.13
4b. Emphasis on collegiality - Self	**.40**	.02	.14	**.38**
5b. Emphasis on character, ethics, integrity - Self	**.35**	.03	.09	**.47**
6b. Importance of programs for at-risk students - Self	.22	.15	.13	**.48**
7b. Emphasis on innovation - Self	.32	-.02	.05	**.54**
8b. Views teachers as leaders - Self	**.44**	-.03	-.06	**.46**
9b. Emphasis on reflective practice - Self	**.35**	-.05	.13	**.57**
External Forces				
80b. Participative decision making - Supervisor	**.47**	.04	.13	.21
81b. System of rotating leadership - Supervisor	**.45**	-.03	.21	.03
82b. Recognizes ability or expertise rather than - Supervisor	**.52**	.03	.10	.24
83b. Arrives at goals through consensual process - Supervisor	**.58**	-.04	.23	.08
84b. Values members as individual human beings - Supervisor	**.61**	.07	-.03	.21
85b. Commitment to employee growth - Supervisor	**.62**	.07	.06	.26
86b. Power sharing - Supervisor	**.62**	-.08	.10	.24
87b. Promotes community and cooperation - Supervisor	**.63**	-.04	.05	.16
88b. Promotes nurturing and caring - Supervisor	**.65**	-.02	.05	.24
89b. Promotes subordinate empowerment - Supervisor	**.54**	.07	.11	.24

93. External Environment	.29	.04	-.04	-.05
79. My school board shares my vision for the organization.	**.38**	.28	.17	.06

Leadership Behaviors

10. Leads by example	.12	**.45**	.12	.15
11. Combines social talk with administrative talk	.10	.02	**.42**	.02
12. Uses affiliative language	.09	.20	**.46**	.10
13. Participative	.07	.32	**.41**	.09
14. Inclusive	.00	.29	**.47**	.06
15. Nurturing	.15	.04	**.62**	.07
16. Democratic	.06	-.09	**.58**	.04
17. Intuitive	.02	.25	**.45**	-.04
18. Ability to "juggle"	.08	**.40**	.22	.04
19. Strong communicator	-.03	**.50**	.25	.16
20. Mentor Persistent	.08	.30	.29	.07
21. Flexible/adaptable	-.05	.23	**.40**	.11
22. Life-long learner	-.04	**.38**	.16	.21
23. Community Builder	.05	.17	.05	.03
24. Cooperative	.03	.16	**.43**	.22
25. Empathetic	.05	.04	**.59**	.02
26. High expectations	.06	**.42**	.21	.29
27. People-oriented	.02	.07	**.58**	.05
28. Compassionate	.03	-.05	**.58**	.13
29. Sense of collegiality	.04	.10	**.57**	.26
30. Team Player	.05	.16	**.48**	.24
31. Strong interpersonal skills	.14	.19	**.59**	.05
32. Consensus builder	.07	.21	**.60**	.06
33. Strong academic self-concept	.13	**.41**	.33	.24
34. Empowers others	.04	**.36**	**.38**	.16
35. Networker	.08	.30	**.39**	.02
36. Transformational	-.05	.39	**.49**	.16
37. Motivational	.02	**.40**	.39	.19
38. Shares a vision	.05	**.51**	.33	.05
39. "Can do" philosophy (resourceful)	.03	**.54**	.28	.13
40. Persistent	.06	**.58**	.00	.03
41. Dominant (desire to influence others)	.02	**.39**	-.08	.17

42. Dependable	.07	**.39**	.04	.02
43. Efficient	.00	**.49**	.04	-.04
44. Assertive	-.02	**.63**	-.07	.08
45. Directive	.01	**.56**	-.23	.01
46. Authoritative	.05	**.38**	-.25	.22
47. Decision maker	.05	**.58**	.04	.13
48. Risk taker	-.04	**.43**	.21	.08
49. Task oriented	.07	**.44**	-.04	.00
50. Controlling	.09	.29	-.24	.07
51. Prefers routine and stability	.15	-.05	-.05	.07
52. Delegating	.09	.30	.10	.16
53. Change agent	-.05	**.51**	.25	.12
54. Influencer	.10	**.53**	.33	.08
55. Analytical	.20	**.47**	-.01	.02
56. Strong need for power	.02	.14	-.27	.08
57. High energy	.04	**.44**	.24	.00
58. Achievement oriented	.11	**.60**	.11	-.04
59. Emotionally stable	.12	**.40**	.29	.07
60. Self sufficient	.12	**.47**	.27	.07
61. Resourceful	.07	.34	.16	-.10
62. Effective time manager	.00	**.40**	.12	-.14
63. Tolerant of stress	-.03	.02	.00	.15
64. Organized	.02	**.45**	.05	-.02
65. Persuasive	.14	**.50**	.22	.06
66. Compliant	.17	.08	.04	.07
67. Tolerance for ambiguity	.07	.10	.12	.05
68. Receptive to new ideas change	-.02	.30	**.36**	.05
69. Interactive	.00	.31	**.55**	.14
70. Emotionally expressive	.13	.11	**.39**	.16
71. Alert to social environment	.02	.15	**.46**	.08
72. Impulsive	.11	.04	.04	.04
73. Responsive to needs of faculty/staff	.13	.13	**.42**	.07
74. I am an effective leader	.01	**.53**	.26	.13
75. I know what I need to do to improve my leadership	.05	.31	.30	.17
76. I often reflect on the impact of my leadership	-.02	.28	**.35**	-.05
77. It is easy to get others to see my point of view	.18	.30	.29	-.06

78. I am good at finding out what my constituents want	.28	.27	.32	-.02

Organizational Structure

80a. Participative decision making – Organization	.20	-.05	.00	.05
81a. System of rotating leadership – Organization	**.35**	.09	.19	-.08
82a. Recognizes ability or expertise rather than – Organization	**.69**	.15	.13	-.05
83a. Arrives at goals through consensual process – Organization	**.59**	.13	.24	-.24
84a. Values members as individual human beings – Organization	**.71**	.10	.03	-.17
85a. Commitment to employee growth – Organization	**.69**	.17	.05	-.10
86a. Power sharing – Organization	**.67**	.09	.09	-.21
87a. Promotes community and cooperation – Organization	**.64**	.14	.08	-.13
88a. Promotes nurturing and caring – Organization	**.70**	.11	.08	-.17
89a. Promotes subordinate empowerment - Organization	**.67**	.20	.12	-.09
90. Formalization; 1 = Few Rules, 4 = Many Written Rules	-.22	-.08	.03	.13
91. Specialization; 1 = Overlapping, 4 = Separate tasks/roles	-.13	.04	.08	.16
92. Hierarchy	-.22	-.01	.07	.27
94. Culture	**.42**	.13	-.06	.11
95. Professionalism	**.43**	.05	-.02	.19
96. Goals	**.38**	.14	.04	.25

Note. Boldface indicates highest factor loadings.

The following items loaded on two factors and are depicted in Table 3 in bold in two

columns: (a) emphasis on collegiality - Self, (b) emphasis on character, ethics, integrity - Self,

(c) views teachers as leaders - Self, (d) emphasis on reflective practice - Self, and (e) empowers

others. The items proposed on the construct, values, attitudes, and beliefs, loaded on one factor

exclusively. The items proposed on the construct, leadership behaviors, loaded on two factors.

The percentage of variance that is explained by the confirmatory four-factor analysis is: factor I

8.243%, factor II 8.159%, factor III 7.550%, and factor IV 4.389%. The four-factor analysis

explained 28.341% of the variance of the data (Table 4), which was consistent with that of the

SLT model originally proposed by Irby, Brown, and Duffy in 1999.

Table 4

Percentage of the Variance Explained by Factors in the Four-Factor Analysis

Factor	Eigenvalues	% of Variance	Cumulative %
I	16.968	8.243	8.243
II	7.733	8.159	16.401
III	4.303	7.550	23.952
IV	3.588	4.389	28.341

Factors Identified from the Organizational and Leadership Effectiveness Inventory

To determine the factors that could best be identified by the OLEI constructs, a five-factor factor analysis with varimax rotation was employed, and a revised factor model with higher-order factors emerged. Higher-order factorial designs allow the researcher to examine the interactions of variables (Howell, 1999) and to better explain the data from the OLEI. The proposed higher-order factor model can explain 38% of the variance of the data. The sub-factors of leadership behaviors, management behavior and interpersonal behavior explain 26.969 % of the variance, while 10.931% of the variance is explained by the three factors, organizational structure, external forces, and values, attitudes, and beliefs. A total of 69 items measured leadership behavior, while 16 items measured organization structure, 12 items measured external forces, and 18 measured values, attitudes, and beliefs. The much greater number of items measuring leadership behavior may have resulted in the higher percentage of variance for this factor. Balancing the number of items per factor addressed this issue (Table 5).

The percent of variance explained by each factor follows: (a) factor I leadership behavior, management behavior 18.870%, (b) factor II leadership behavior, interpersonal behavior 8.099%

(c) factor III external forces 4.184%, (d) factor IV organizational structure 3.440%, and (e) factor

V values, attitudes, and beliefs 3.307%.

Table 5

Percentage of the Variance Explained by Factors in the Five-Factor Analysis

Factor	Factor/Sub-factor Identified	Eigenvalues	% of Variance	Cumulative %
I	Leadership Behavior *Management Behavior	17.549	18.870	18.870
II	Leadership Behavior *Interpersonal Behavior	7.532	8.099	26.969
III	External Forces	3.891	4.184	31.152
IV	Organizational Structure	3.199	3.440	34.592
V	Values, Attitudes, and Beliefs	3.076	3.307	37.899

The revised factor model has four higher-order factors that include (a) leadership

behaviors, (b) external forces, (c) organizational structure, and (d) values, attitudes, and beliefs.

One higher-order factor, leadership behavior, has two sub-factors: management behavior and

interpersonal behavior. In our current model, 22 items that did not load in the initial four-factor

solution were omitted from the five-factor analysis. Table 6 presents the item loadings on the

five-factors of the OLEI.

Table 6

Item Loadings on Five Factors of the Organizational and Leadership Effectiveness Inventory

| | | Factors | | | |
Item	I	II	III	IV	V
Factor I: Leadership Behaviors Sub-Factor: Management Behavior					
10. Leads by example	**.45**	.15	.11	.06	.15
18. Ability to "juggle"	**.41**	.25	.09	-.06	.02
19. Strong communicator	**.50**	.25	.05	-.10	.15
22. Lifelong learner	**.37**	.16	-.04	-.08	.28
26. High expectations	**.42**	.23	.11	-.06	.31
33. Strong academic self-concept	**.41**	.30	.15	.05	.24
37. Motivational	**.39**	**.40**	.01	.04	.17
38. Shares a vision	**.49**	.33	-.06	.13	.11
39. "Can do" philosophy (resourceful)	**.52**	.29	-.03	.04	.19
40. Persistent	**.58**	.01	.01	.08	.06
41. Dominant (desire to influence others)	**.37**	.01	-.01	-.01	.21
42. Dependable	**.40**	.09	.08	.05	-.01
43. Efficient	**.50**	.07	.00	.04	-.10
44. Assertive	**.62**	-.02	-.08	.06	.14
45. Directive	**.55**	-.20	-.08	.06	.05
46. Authoritative	**.36**	-.23	.02	-.01	.23
47. Decision maker	**.59**	.05	.04	-.01	.14
48. Risk taker	**.39**	.20	-.08	.03	.18
49. Task oriented	**.44**	-.01	.11	.00	-.04
52. Delegating	.27	.09	-.05	.19	.18
53. Change agent	**.47**	.25	-.17	.09	.21
54. Influencer	**.52**	.32	-.04	.16	.08
55. Analytical	**.47**	-.01	.06	.19	.08
57. High energy	**.45**	.25	.06	.02	-.01
58. Achievement oriented	**.61**	.12	.11	.09	-.02
59. Emotionally stable	**.38**	.32	.10	.06	.08
60. Self sufficient	**.46**	.30	.13	.02	.07
62. Effective time manager	**.39**	.16	-.05	.09	-.16
64. Organized	**.49**	.07	.14	-.06	-.13
65. Persuasive	**.49**	.22	.07	.14	.06
74. I am an effective leader	**.52**	.26	.00	.00	.15

Factor II: Leadership Behaviors
Sub-Factor: Interpersonal Behavior

24. Cooperative	.12	**.46**	.06	-.02	.22
25. Empathetic	.01	**.60**	.03	.05	.03
27. People-oriented	.06	**.60**	.07	-.02	.05
28. Compassionate	-.06	**.60**	.08	.01	.07
29. Sense of collegiality	.05	**.58**	-.02	.05	.29
30. Team Player	.15	**.50**	.10	.00	.20
31. Strong interpersonal skills	.20	**.58**	.17	.07	.03
32. Consensus builder	.20	**.60**	.02	.07	.08
34. Empowers others	**.35**	**.36**	-.01	.08	.18
35. Networker	.30	**.40**	.03	.12	.02
36. Transformational	**.37**	**.50**	-.06	.00	.17
11. Combines social talk with administrative talk	.02	**.42**	.20	-.02	-.05
12. Uses affiliative language	.21	**.44**	.12	.04	.10
13. Participative	.31	**.42**	.06	.06	.10
14. Inclusive	.25	**.47**	-.03	.05	.10
15. Nurturing	.01	**.64**	.12	.13	.07
16. Democratic	-.12	**.59**	.00	.07	.02
17. Intuitive	.22	**.47**	.02	.05	-.02
21. Flexible/adaptable	.26	**.40**	.12	-.11	.06
68. Receptive to new ideas/change	.26	**.35**	-.05	.05	.15
69. Interactive	.25	**.53**	-.04	.08	.24
70. Emotionally expressive	.09	**.40**	.10	.09	.18
71. Alert to social environment	.10	**.46**	-.01	.05	.16
73. Responsive to needs of faculty/staff	.13	**.43**	.06	.13	.09
76. I often reflect on the impact of my leadership	.26	.33	-.09	.06	.02
78. I am good at finding out what my constituents want	.24	.31	.09	.31	.08

Factor III: External Forces

1a. Emphasis on collegiality-Supervisor	-.01	.09	**.35**	.21	**.40**
8a. Views teachers as leaders-Supervisor	-.04	-.07	**.40**	.20	**.43**
9a. Emphasis on reflective practice-Supervisor	-.11	.13	.23	.22	**.57**
80b. Participative decision making - Supervisor	.08	.13	**.56**	.14	.10
81b. System of rotating leadership - Supervisor	-.03	.22	**.36**	.30	-.01
82b. Recognizes ability or expertise rather than - Supervisor	.05	.10	**.70**	.12	.10
83b. Arrives at goals through consensual process - Supervisor	.00	.20	**.61**	.27	.01

84b. Values members as individual human beings - Supervisor	.07	-.03	**.76**	.14	.11
85b. Commitment to employee growth - Supervisor	.12	.05	**.73**	.20	.17
86b. Power sharing - Supervisor	.04	.08	**.78**	.16	.09
87b. Promotes community and cooperation - Supervisor	.00	.04	**.65**	.30	.10
88b. Promotes nurturing and caring - Supervisor	.04	.03	**.73**	.24	.14
89b. Promotes subordinate empowerment - Supervisor	.12	.12	**.76**	.07	.09
79. My school board shares my vision	.24	.15	.19	.32	.18
Factor IV: Organizational Structure					
81a. System of rotating leadership – Organization	.06	.18	.09	**.41**	-.03
82a. Recognizes ability or expertise rather than – Organization	.11	.09	.28	**.66**	.11
83a. Arrives at goals through consensual process – Organization	.07	.18	.07	**.72**	.01
84a. Values members as individual human beings – Organization	-.13	.04	.07	.33	.02
85a. Commitment to employee growth – Organization	.12	.01	.21	**.71**	.12
86a. Power sharing – Organization	.04	.03	.09	**.80**	.02
87a. Promotes community and cooperation – Organization	.10	.04	.14	**.73**	.07
88a. Promotes nurturing and caring – Organization	.06	.03	.17	**.75**	.04
89a. Promotes subordinate empowerment - Organization	.14	.08	.17	**.70**	.14
94. Culture	.10	-.08	.15	**.38**	.22
95. Professionalism	.04	-.04	.18	**.39**	.26
96. Goals	.11	.04	.15	**.35**	.30
Factor V: Values, Attitudes, and Beliefs					
16. Emphasis on professional growth - Self	.21	.10	.05	.02	**.47**
2b. Openness to change/diversity – Self	.21	.17	-.10	-.07	**.46**
4b. Emphasis on collegiality – Self	.07	.27	-.02	.07	**.44**
5b. Emphasis on character, ethics, integrity – Self	.17	.14	.01	-.01	**.54**
6b. Importance of programs for at-risk students - Self	.18	.24	.00	.01	**.52**
7b. Emphasis on innovation - Self	.16	.22	-.06	.02	**.48**
9b. Emphasis on reflective practice - Self	.10	.20	-.09	.14	**.49**
1a. Emphasis on professional growth – Supervisor	.10	.03	.20	.15	**.56**
2a. Openness to change/diversity – Supervisor	.06	.06	.22	.03	**.55**
5b. Emphasis on character, ethics, integrity – Self	-.02	.07	.23	.20	**.56**
6b. Importance of programs for at-risk students - Self	.09	.14	.16	.09	**.51**
7b. Emphasis on innovation - Self	-.07	.05	.27	.12	**.51**

Note. Boldface indicates highest factor loadings.

As a result of the findings, the OLEI was revised to consist of a total of 12 items that addressed the construct organizational structure and a total of 17 items that were designed to assess the external factor on the OLEI. These items were placed in the instrument under the construct that they purported to measure. The instrument also consisted of a total of 55 items that addressed the construct leadership behavior, among which 30 assessed the management behavior sub-factor and 25 assessed the interpersonal behaviors sub-factor. This higher-order factor model included all of the four constructs of the original SLT theory.

Moreover, wording was altered for better readability on two items, one item that did not load on the five-factor analysis was deleted, and three items were added to assess external forces in addition to the supervisor. The two items that were altered for better readability were: (1) *my school board shares my vision*, which was changed to *my school board supports my philosophy*; and (2) I *often reflect on the impact of my leadership*, which was changed to *reflective*. The item that did not load on the five-factor analysis and was deleted from the inventory was *delegating*. Additionally, three items were added to assess external forces: (a) *my leadership is affected by the cultural expectations of the community*, (b) *the socio-economic levels in the community affect my leadership*, and (c) *language groups in the community impact my leadership*. Four sub-scales of the OLEI are listed with their corresponding items in Table 7.

Table 7

Summary of Items Included in the Revised Organizational and Leadership Effectiveness Inventory

Items
Factor I: Leadership Behaviors (Sub-Factor: Management Behavior)

1.   Leads by example

2.   Ability to "juggle"

3. Strong communicator

4. Lifelong learner

5. High expectations

6. Strong academic self-concept

7. Motivational

8. Shares a vision

9. "Can do" philosophy (resourceful)

10. Persistent

11. Dominant (Desire to influence others)

12. Dependable

13. Efficient

14. Assertive

15. Directive

16. Authoritative

17. Decision maker

18. Risk taker

19. Task oriented

20. Analytical

21. Change agent

22. Influencer

23. High energy

24. Achievement oriented

25. Emotionally stable

26. Self-sufficient

27. Effective time manager

28. Organized

29. Persuasive

30. I am an effective leader

Factor I: Leadership Behaviors (Sub-Factor: Interpersonal Behavior)

31.   Cooperative

32.   Empathetic

33.   People-oriented

34.   Compassionate

35.   Sense of collegiality

36.   Team Player

37.   Strong interpersonal skills

38.   Consensus builder

39.   Empowers others

40.   Networker

41.   Transformational

42.   Combines social talk with administrative talk

43.   Uses affiliative language

44.   Participative

45.   Inclusive

46.   Nurturing

47.   Democratic

48.   Intuitive

49.   Flexible/adaptable

50.   Emotionally expressive

51.   Receptive to new ideas/change

52.   Interactive

53.   Alert to social environment

54.   Responsive to needs of faculty/staff

55.   Reflective

Factor II: External Forces

56.   Emphasis on collegiality

57.   Views teachers as leaders

58.   Emphasis on reflective practice

59.   Participative decision-making

60.   System of rotating leadership

61.   Recognizes ability or expertise

62.   Arrives at goals through consensual process

63.   Values members as individual human beings

64.   Commitment to employee growth

65.   Power sharing

66.   Promotes community and cooperation

67.   Promotes nurturing and caring

68.   Promotes subordinate empowerment

69.   My school board supports my philosophy

70.   My leadership is affected by the cultural expectations of the community

71.   The socio-economic levels in the community affect my leadership

72.   Language groups in the community impact my leadership

Factor III: Organizational Structure

73.   System of rotating leadership

74.   Recognizes ability or expertise

75.   Arrives at goals through consensual process

76.   Values members as individual human beings

77.   Commitment to employee growth

78.   Power sharing

79.   Promotes community and cooperation

80.   Promotes nurturing and caring

81.   Promotes subordinate empowerment

82.   My organization has clear norms and values

83.   My organization encourages professional training

84.   My organization has well defined goals

Factor IV: Values, Attitudes, and Beliefs

85.   Emphasis on professional growth

86.   Openness to change/diversity

87.   Emphasis on collegiality

88.   Emphasis on character, ethics, integrity

89.   Importance of programs for at-risk students

90.   Emphasis on innovation

91.   Emphasis on reflective practice

92.   Emphasis on character, ethics, integrity

93.   Emphasis on professional growth

94.   Emphasis on innovation

95.   Importance of programs for at-risk students

96.   Openness to change/diversity

_____

Summary and Conclusions

The data obtained in the current study resulted in modifications to the OLEI based on

analysis of its psychometric properties. The revised OLEI included a total of 96 items with four

sub-scales that addressed: (a) leadership behaviors with management behavior and interpersonal

behavior as sub-factors, (b) external forces, (c) organizational structure, and (d) values, attitudes,

and beliefs. The 22 items that did not load on the confirmatory four-factor analysis were deleted

from the instrument and items were rearranged according to how the items loaded. Accordingly,

the results of this study further validated the synergistic leadership theory as follows: (a) The

OLEI data aligned with the four constructs of the SLT and (b) the revised OLEI based upon the

five-factor model includes the original four constructs of the SLT. We conclude that the four

constructs become four factors with one factor containing two subfactors.

Implications

The synergistic leadership theory addresses the need for a leadership theory inclusive of

the voice and experience of female leaders. If the female point of view in leadership is not

included among leadership theories, the field of education could be negatively impacted. Thus,

the SLT has been presented for use by educational leaders.

To guarantee the implementation of a new theory, validation is essential. The theory itself

was developed through qualitative studies. Combining qualitative studies with empirical

validation, the synergistic leadership theory:

1. possesses explanatory power across a range of positions and by gender (Trautman,

   2000);

2. is practical and useful in understanding interactive systems (Trautman, 2000);

3. is parsimonious (simply integrates a large number of variables) (Holtkamp, 2001);

   and

4. promotes dialogue around a model that is cognizant of female, as well as male,

   realities (Trautman, 2000).

Our current study has evidenced that the OLEI reflected the original constructs of the

SLT. Furthermore, our study has reaffirmed the construct validity of the OLEI through

confirmatory factor analyses. Thus, the revised OLEI was a statistically valid measure.

Additionally, because there was alignment of the OLEI to the SLT with a sample of both male

and female administrators, it may be considered that the instrument and the theory are applicable

to both male and female leaders.

The OLEI may be of assistance in determining the alignment of the SLT factors related to

the leader's behaviors with the external forces, values, attitudes, and beliefs. As the SLT has

been, is being, and will be validated across geographic areas and ethic cultures in the United

States (Bamburg, 2004; Hernandez, 2004; Holtkamp, 2001; Kaspar, 2006; Trautman, 2000;

Truslow, 2004) and internationally (Schlosberg, 2003), it has the potential as a gender neutral

leadership and organizational theory to be widely applied in different academic and business

contexts worldwide.

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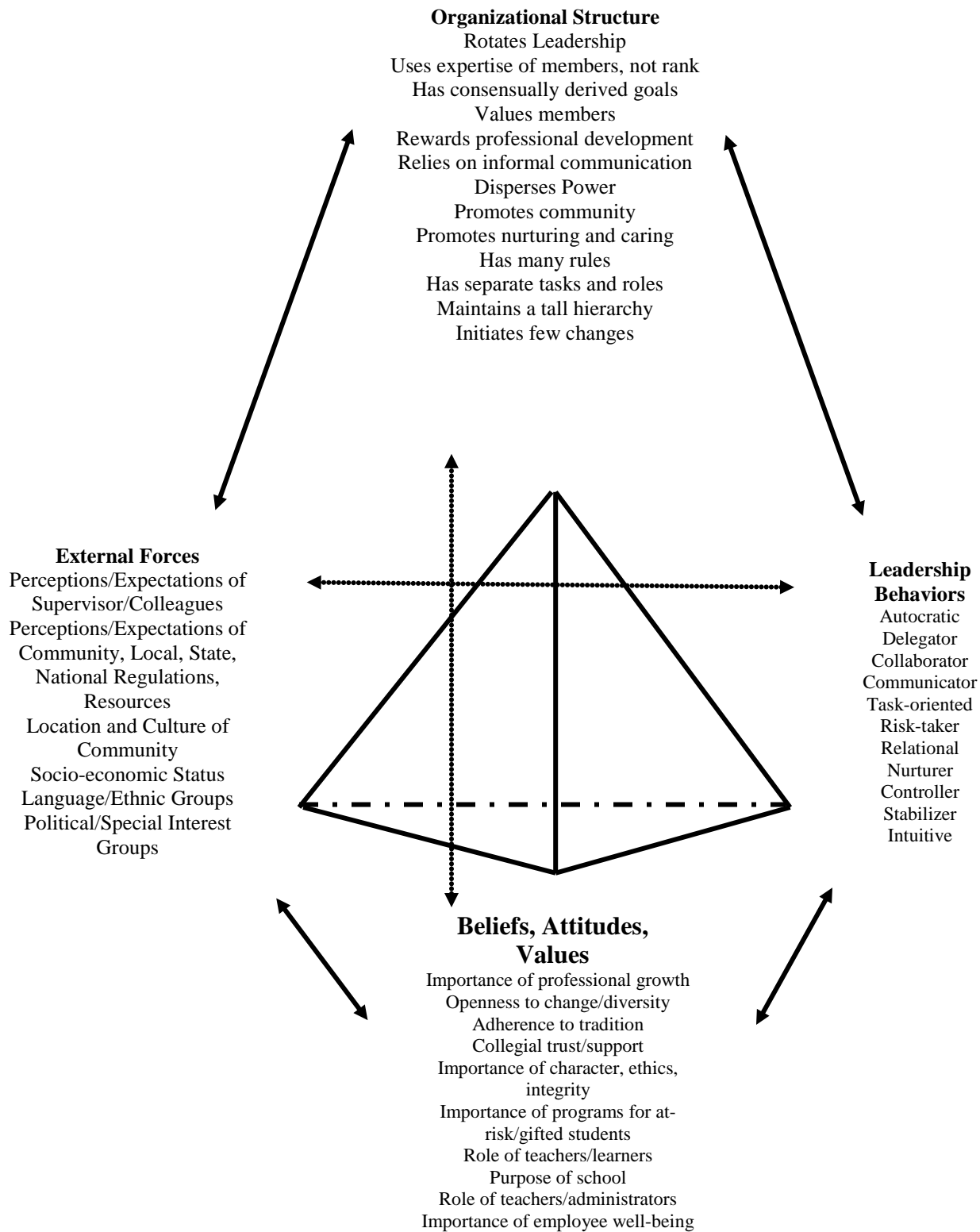Regan, H., & Brooks, G. (1995). *Out of women's experiences: Creating relational leadership.* Thousand Oaks, CA: Corwin Press.

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Figure 1. Tetrahedral model for the synergistic leadership theory*

Organizational Structure
Rotates Leadership
Uses expertise of members, not rank
Has consensually derived goals
Values members
Rewards professional development
Relies on informal communication
Disperses Power
Promotes community
Promotes nurturing and caring
Has many rules
Has separate tasks and roles
Maintains a tall hierarchy
Initiates few changes

External Forces
Perceptions/Expectations of
Supervisor/Colleagues
Perceptions/Expectations of
Community, Local, State,
National Regulations,
Resources
Location and Culture of
Community
Socio-economic Status
Language/Ethnic Groups
Political/Special Interest
Groups

**Leadership
Behaviors**
Autocratic
Delegator
Collaborator
Communicator
Task-oriented
Risk-taker
Relational
Nurturer
Controller
Stabilizer
Intuitive

**Beliefs, Attitudes,
Values**
Importance of professional growth
Openness to change/diversity
Adherence to tradition
Collegial trust/support
Importance of character, ethics,
integrity
Importance of programs for at-
risk/gifted students
Role of teachers/learners
Purpose of school
Role of teachers/administrators
Importance of employee well-being

*Examples under the factors are not all-inclusive.
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appeared in Irby, Brown, Duffy, & Trautman, 2002.