Educational leadership: the case of graduate students in Mexico

Eduardo Raúl Díaz Gómez
CETYS Universidad

Abstract

This study was conducted by using one leadership questionnaire to collect self-evaluations from graduate students. Exploratory factor analysis revealed that the Leadership Practices Inventory measures two leadership constructs consistent with transformational leadership theory: charismatic and adaptive leadership. The study was conducted by surveying 309 graduate students in Mexico. Results suggest that Master of Education students scored higher than Master of Business Administration students in the charismatic leadership factor. No statistically significant differences were identified between those two groups for the adaptive leadership factor. This finding may help educational leaders develop assessment plans designed to measure leadership self-efficacy in their students while facilitating a data-driven approach for improvement of curriculum and teaching. Moreover, this study reinforces the claims of researchers who noted that models and questionnaires of transformational leadership are based on overlapping dimensions.

Liderazgo educativo: el caso de estudiantes de posgrado en México

Resumen

Este estudio se realizó mediante el uso de un cuestionario de liderazgo para el acopio de autoevaluaciones en estudiantes de posgrado. El análisis factorial exploratorio reveló que el Inventario de Prácticas de Liderazgo mide dos constructos de liderazgo consistentes con la teoría del liderazgo transformacional: liderazgo carismático y adaptativo. El estudio se realizó encuestando a 309 estudiantes de posgrado en México. Los resultados sugieren que los estudiantes de Maestría en Educación obtuvieron calificaciones más altas que los estudiantes de Maestría en Administración de Negocios en el factor de liderazgo carismático. No se identificaron diferencias estadísticamente significativas entre estos dos grupos para el factor de liderazgo adaptativo. Este hallazgo puede ayudar a los líderes educativos a desarrollar adecuadamente planes de evaluación diseñados para medir la autoeficacia del liderazgo en sus estudiantes; lo

cual facilita un enfoque basado en datos para mejorar el currículo y la enseñanza. Además, este estudio refuerza las afirmaciones de los investigadores que notaron que los modelos y cuestionarios de liderazgo transformacional se basan en dimensiones superpuestas.

Introduction

This research can serve faculty identify one leadership instrument that they can use to assess leadership competencies with graduate students in Mexico. The main assumption behind this study is that faculty and staff are concerned with developing professionals that can help address key challenges that affect society as a whole (Samad, 2015; Cantón, 2016). Educational institutions are expected to help their students develop relevant competencies so they may lead their organizations in the near future (Gómez, 2016). For this reason, faculty are engaged in the development and assessment of soft skills across academic disciplines. They seek to ensure the proper training of well-rounded leaders in different types of organizations (Brungardt, 2011; Jain, Chaudhary & Jain, 2016). Among the concerns of faculty is finding appropriate measures to assess leader behaviors needed to succeed in less hierarchical organizational roles that promote long-term sustainability (Fischer, Wielkiewicz, Stelzner, Overland & Meuwissen, 2015).

Educational leaders are responsible for creating favorable organizational environments where teachers and school administrators can feel free to innovate and find ways to involve their students in their own leadership development process (Niehaus, O'Rourke & Ostick, 2012). They can do this by establishing learning goals, through appropriate assessment strategies across their programs, that are meant to increase leadership self-efficacy (Díaz, Sánchez & Santana, 2019). The problem is that leadership development through formal training is seldom measured effectively, and more research is needed to properly validate leadership measures used in educational contexts (Zula, Yarrish & Christensen, 2010). Dimotakis, Mitchell and Maurer (2017) argued that assessment and feedback are important for the development of self-efficacy but cautioned that assessment centers often require investing resources that may be hard to find. It is the job of educational leaders to ensure that these types of activities take place, but it is important that these processes are well-guided and grounded on relevant theoretical models.

The purpose of this study is to compare Leadership Practices Inventory (LPI) scores between one group of Master in Education (EdM) and one group of Master of Business Administration (MBA) students, to help educational leaders identify a framework for developing students' leadership competencies through appro-

priate assessment, which could lead to data-driven changes in the curriculum and teaching approach. The groups of graduate students were selected because their academic programs explicitly aim to develop leadership competencies through the curriculum. Specifically, this study provides an example of how one transformational leadership (TL) model, Kouzes and Posner's (2012) Five Practices of Exemplary Leadership, may be implemented as part of an assessment process with graduate students in Mexico. This type of research is not without precedent. Olivares, Garza, López and Suárez (2016) developed their own leadership assessment with 52 academic leaders in Medical Schools from different parts of Mexico. Their justification for conducting the study was the notion that educational organizations need good leaders to promote a culture of quality designed to serve their students. This assumption guides the present study as well.

Review of the literature

The need to involve leadership training in formal education

Successful leaders in educational organizations are capable of managing external adversity while securing support from internal followers (Cencič & Erčulj, 2014). This allows them to pursue important goals like transparency, efficiency, and equity (Serrano, 2008), and implement processes that lead to overall educational quality (Fernández, Cuevas & Méndez, 2017). These outcomes then permeate to students, who can then go out into the world and replicate what they have learned from their teachers. Morris and Laipple (2015) noted that leadership training has proven significant in helping educational management students feel better prepared to perform well in administrative roles and deliver superior results with their colleagues and followers. However, it is still unclear what type of leadership training is appropriate for any given group of management students, and how theoretical models apply to the contexts in which such learners operate.

Since the range of contexts is wide and the literature on the subject is limited, there is a need to expand on the current approaches available today to measure leader behavior and performance (Ewest, 2015). Again, access to resources and freedom may go a long way as faculty and staff engage in leader development. Unfortunately, leadership development in academic programs designed for individuals working in educational institutions has been neglected, and there is little research to support those in charge of managing educational programs to address the issue (Quin, Deris, Bischoff & Johnson, 2015). To help narrow the research gap, McCollum and Kajs (2007) validated the 2×2 achieve-

ment goal framework to use it as a measure for future research on educational leadership research. Their study helped address issues on educational leadership development among graduate students, at least in terms of goal-orientation. Moreover, Herbst and Conradie (2011) used Kouzes and Posner's model to identify the need for greater feedback mechanisms on the performance of educational leaders in South Africa. These efforts are worthy of follow-ups in different contexts.

Cultural implications in leader development

Previous research has already established that leaders in Mexico and the United States have different personality traits that may help explain differences in leadership performance (Ojeda, Ree & Carretta, 2010). In a broader sense, Javidan, Dorfman, Luque de and House (2006) used implicit leadership theory to identify differences in leadership preferences across several cultures. Their work inspired other efforts to examine the role of culture on leadership approach. For example, Hidalgo, Manzur, Olavarrieta and Farías (2007) examined the effect of culture on Mexican leaders and concluded that these individuals tended to be less willing to take risks and deal with uncertainty in comparison with leaders from other cultures.

Given the many challenges facing educational leaders in Mexico, like adequately preparing their students for the world of work (Pino del & Aguilar, 2013), there is a need for networks designed to promote collaboration among peers across educational institutions (Valencia & Trejo, 2016). It is also important to address early decreases in wage potential that are taking place among college educated professionals in the country (Campos, Lopez & Lustig, 2016), and understanding the implications of national culture on leadership self-efficacy (Díaz et al., 2019). Given this context, leadership development through formal education has become essential (Cantón, 2016). The main takeaway from these studies is that leader development can be national culture-bound, which means that care should be given to the selection of an appropriate leadership model from one context to another (Díaz & Lituchy, 2020).

Before launching new leadership development programs, it is important for educational leaders to examine the models that are currently available that may be adapted to serve specific student populations. For instance, an adapted version of the Multifactor Leadership Questionnaire (MLQ), a well-known instrument designed to measure TL dimensions, proved to be a good fit with a sample of 1515 workers in the education industry in Mexico (Mendoza & García, 2013). Moreover, the LPI, another prominent TL instrument, showed acceptable internal consistency ($\alpha > .70$)

in four out of five dimensions with a group of graduate students in Mexico (Díaz, 2018). These studies suggest that TL model is a good fit for leadership development in the country.

TL theory

TL theory emerged from the work of Burns (1978), a historian mostly concerned with political leadership. He noted that effective leaders typically develop strong relationships with their followers as they elevated one another to superior levels of performance. These relationships were based on transactional, charismatic and moral dimensions. Bass (1985) applied these concepts in organizational settings, creating a model based on transformational, transactional and laissez faire dimensions. His work was usually based on data collected through the MLQ. Similarly, Kouzes and Posner's (2012) Five Practices of Exemplary Leadership model has been used extensively in organizational settings. Their work emerged from hundreds of interviews with organizations' successful leaders who were asked to describe their personal best leadership practices. From these interviews, the authors concluded that effective leaders *model the way, inspire a shared vision, challenge the process, enable others to act* and *encourage the heart* (Kouzes & Posner, 2012).

As studies framed on TL theory took place in educational contexts, questions regarding the validity, reliability and applicability of the models used to guide the researches. Carless (2001) argued that, in theory, it was possible to identify five leadership constructs with the LPI, but her analysis revealed a single overarching construct. Her insights were consistent with the work of Heinitz, Liepmann and Felfe (2005), who examined the nine factors in the MLQ, and concluded that a three-factor solution was a better fit instead of the original nine factors. Heinitz et al., (2005), along with Carless (2001), and Barbuto (2005), further suggested the need to conduct more research on TL model dimensions to address concerns regarding the validity of TL questionnaires. These concerns go deeper than issues regarding the questionnaires themselves. Yukl (1999) argued that the overlapping constructs found in studies conducted under TL theory are due in part to the ambiguity of the transformational models themselves.

TL theory and education

Previous studies have documented the positive relationship between leader behavior, self-efficacy, and performance (Moloney, Dion, Hickey & Siccama, 2004; Mayfield & Mayfield, 2012; Sebelski, 2017; Damanik & Aldridge, 2017). Moreover, previous works

used TL theory in educational contexts to assess the implications of culture (Liu, 2017; Díaz et al., 2019; Díaz & Lituchy, 2020), adaptability (Nir & Piro, 2016), cognitive effort in virtual contexts (Kahai, Jestire & Huang, 2013), and gender (Santamaría & Jean-Marie, 2014; Díaz, 2018; Díaz & Lituchy, 2020). It should be noted, however, that not everyone agrees with the notion that transformational leaders operate effectively in educational contexts. Şlmşek (2013) noted that educational institutions are about safeguarding the main truths that hold societies together, which contrasts with the change-orientation mentality that characterizes transformational leaders. Anderson (2017), however, argued that educational institutions are experiencing changes due to external pressures and demand of accountability that require the involvement of change agents to address current challenges facing these types of organizations.

The issue here is that educational leaders who do not understand the role of leadership in addressing current organizational challenges may end up promoting the development of ill-prepared future managers. Asik-Dizdar (2015) captured the main criticisms directed at management education. He argued that educational institutions place too much emphasis on teaching hard skills within its graduate management programs and tend to ignore the role of soft skills in management performance. This leads to the development of narrow-minded managers that are characterized by hierarchical focus and in some cases greed. The issue is so pressing that it has led to the creation of academic forums designed to question current educational approaches of management teaching and learning by examining the role of theory and practice, and management versus leadership development (Augier & Teece, 2005).

Hannah, Sumanth, Lester and Cavarretta (2014) acknowledged several criticisms aimed at the modern leadership models (i.e. TL models) in the literature but noted that the same approaches addressed previously neglected aspects of leadership, like developing shared purpose for the future based on moral grounds among group members. Therefore, it is reasonable to suggest that TL models and questionnaires are useful and appropriate for assessment of leader behaviors, but it is up to the researchers to ensure that the data that stems from research conducted under TL theory meets the standards of relevance, timeliness and accuracy. Moreover, it is up to educational leaders to ensure that faculty and staff understand TL theory and include it as part of their teaching.

Study rationale

There is enough evidence to suggest that management education needs to improve (Pfeffer & Fong, 2002; Feldman, 2005; McCollum

& Kajs, 2007), and this falls squarely on the shoulders of educational leaders (Brennan & Austin, 2003; McCollum & Kajs, 2009; Chiang, Gómez & Salazar, 2014; Boud et al., 2014; Stein, Macaluso & Stanulis, 2016). A barrier for educators who want to address the issue is that leadership efficacy is seldom assessed properly (Zula et al., 2010), so it is not clear how to evaluate leadership as a learning competency. By using the LPI to measure TL dimensions in graduate students, this study seeks to promote a clearer understanding of leadership measurement.

The dependent variables in this study were the leadership dimensions which emerge of the LPI, and the independent variables were the two academic programs in the sample. The academic programs in question were EdM and MBA programs. Based on the brief review of the relevant studies on management and leadership education, and leadership theory, it is clear that any analysis should begin by making sure that the leadership instrument in use meets the criteria for validity and reliability. In this case, steps will be taken to ensure that the LPI is an appropriate assessment tool for the purposes of this study. Once this has taken place, the purpose of this study will be achieved by testing the following hypothesis:

▸ H_0: There are no statistically significant differences in LPI mean scores between EdM and MBA groups in the sample.
▸ H_1: There are statistically significant differences in LPI mean scores between EdM and MBA groups in the sample.

Method

This is a cross-sectional, post-facto research design aimed at identifying specific leadership dimensions that can serve as learning competencies appropriate for the design of an assessment plan that may guide faculty and staff in helping their students develop the type of leadership competencies that are needed in modern organizations. Although not entirely reported here, the data gathering and analysis process served as an actual assessment exercise that may be replicated across academic programs and institutions.

Sample

The criteria for selecting the participants was their enrollment in education and management programs that explicitly aimed to develop leaders capable of serving the needs of modern organizations, and that they were over the legal age to participate in the study under their own, free will. In total, 309 graduate students in the state of Baja California (Mexico) participated. Although

smaller samples have been used in studies like this, widely accepted standards for calculating the size of the sample include a 10:1 ratio in terms of cases to items, and a sample of 300 responses for factor solutions with few items per factor (Beavers et al., 2013). These criteria were exceeded in the present study. This was a purposive sample with the specific aim of comparing results between the two groups in the survey.

Eighty-two percent of the participants were MBA students and 18% were EdM students. The difference in sample size is indicative of the student population in the region. Female students accounted for 58.3% of the sample, and males accounted for 41.7%. These graduate students were invited to participate in the study with the consent of their program coordinators. The students were approached in their classrooms with an invitation to participate. The researcher informed them that the results of the study would to be used in aggregate form, meaning that individual responses would not be published. The students who agreed to participate read and signed an informed consent form, and then proceeded to complete de LPI self (Spanish version).

Instrument

To measure the five leadership dimensions in their model, Kouzes and Posner (2013) developed the LPI, a 30-item questionnaire with five factors that matched each of the five practices in their model. The LPI is available in several languages, a student version, and self and observer versions, giving it a wider spectrum in terms of appropriateness with subjects from different backgrounds. Over the years, the LPI has shown strong validity and reliability (Posner, 2016). Moreover, the LPI, along with other TL questionnaires, has proven effective in measuring this type of behavior in educational contexts (Garrett-Staib & Burkman, 2015; Quin et al., 2015; Herbst & Conradie, 2011; Balyer, 2012; Martínez, 2014; Mendoza, Escobar & García, 2012; Al Asad, Dănăiață & Năstase, 2017; Díaz & Lituchy, 2020).

The LPI self was designed to measure perceptions of self in terms of five TL dimensions (Kouzes & Posner, 2012). Table 1 illustrates the five dimensions and items of the LPI. The questionnaire uses a 10-point Likert scale that ranges from 1 (almost never) to 10 (almost always).

The first dimension, *model the way*, measures the behaviors of an individual who leads by example and acts in accordance with his or her values. The second dimension, *inspire a shared vision*, measures the behavior of an individual who creates consensus among members of a group in pursuit of worthy goals. The third dimension, *challenge the process*, measures the behavior of an individual who is willing to take risks, and work outside his or

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Table 1. LPI dimensions or leadership practices.

Dimensions	Items
Model the way	1. Personal example
	6. Principles and standards
	11. Keep promises
	16. Ask for feedback
	21. Build consensus
	26. Articulate leadership philosophy
Inspire a shared vision	2. Talk about the future
	7. Describe the future
	12. Share vision
	17. Enlisting common vision
	22. Aspiration
	27. Speak of purpose
Challenge the process	3. Seek opportunities
	8. Challenge others
	13. Cross organizational boundaries
	18. Learn from failure
	23. Plan and assess
	28. Take risks
Enable others to act	4. Develop cooperation
	9. Listen to diverse perspectives
	14. Treat others with respect
	19. Support decisions
	24. Give freedom
	29. Ensure growth
Encourage the heart	5. Praise people
	10. Communicate confidence
	15. Reward people
	20. Recognize people
	25. Celebrate accomplishments
	30. Appreciate and support

Source: Adapted from Kouzes and Posner (2013).
Note 1: Permission to use the LPI was granted by the publisher.
Note 2: The complete LPI questionnaire may not be reproduced for publication.

her comfort zone in order to adapt to the changing dynamics of the market and organizational environments. The fourth dimension, *enable others to act*, measures the behavior of an individual who is willing to empower others to make choices and give them the confidence to take action. The last dimension, *encourage the*

heart, measures the behavior of an individual who celebrates achievements and publicly recognizes others who excel in their tasks (Kouzes & Posner, 2012).

Data analysis

As discussed in the *Review of the literature*, TL instruments should be examined for validity and reliability because of the tendency of factors to overlap (Carless, 2001). In this study, the LPI was examined through Exploratory Factor Analysis (EFA), specifically, Principal Component Analysis (PCA), an approach that has been used in previous works that dealt with measures of self-efficacy using translated versions of a questionnaire (Covarrubias & Mendoza, 2016). Consistent with previous research involving PCA in educational contexts, the criteria used throughout the analysis included identifying factors with eigenvalues of 1.0 or higher, the use of *Varimax* as a rotation method, and establishing a factor loading cut-off point ≥ .50 while discarding items with cross-loadings ≥ .30 (Schönrock-Adema, Heijn, Penninga, Hell van & Cohen-Schotanus, 2009; Liu, 2013). After the initial solution, items with insufficient (< .50) factor loadings, or significant cross-loadings (≥ .30) were eliminated. Factors with single items or insufficient Cronbach's alpha coefficients ($\alpha < .70$) were eliminated as well. Every time items were eliminated, the process was repeated to ensure consistency. The goal was to reduce any overlapping items to create a leaner, more appropriate instrument that fit the sample under study.

Since the publishers of the LPI had developed their own Spanish version of the instrument, there was no need to translate it. In fact, the publishers granted permission to use the LPI Spanish version for research purposes, provided the items were not changed or adapted, the instrument was not published in its entirety, and the original authors were clearly identified in any published materials. The last part of the analysis was meant to address the hypothesis H_1. It consisted of running independent samples *t* tests to compare mean scores between students from the two groups in the study (EdM and MBA). Since the samples were uneven, Levine's test of equality of variances was employed to ensure that *t* test results were appropriate. Statistical significance was established at ≤ 5%. All of the analyses were assisted with the use of the statistical package for the social sciences (SPSS, version 23).

Results

EFA yielded a two-factor solution. The Kaiser-Meyer-Olkin (KMO) test of sampling adequacy was .92, which is considered strong,

above the .80 minimum, and Bartlett's test of sphericity was statistically significant (X^2 = 4119.78, p < .001), suggesting that linear combinations among the items in the LPI take place. The main criteria for the initial solution was eigenvalues of 1.0 or higher. These factors explained 54.28% of the variance. Communalities for the 30 items ranged from .35 to .67. By examining EFA outputs, the decision was made to reduce the 30-item questionnaire to 14 items. This was the case once insufficient factors loadings, cross-loadings and single-item factors were eliminated. The final step of the analysis was ensuring internal consistency by running reliability analyses for the two factors that resulted from the EFA (see table 2). The two factors totaled 14 items, factor loadings ≥ .50, and appropriate alpha Cronbach coefficients (α ≥ .70). With this, the structure of the LPI was deemed appropriate for conducting further analysis with the sample under study. The last part of the analysis consisted of running independent samples t tests to compare LPI mean scores between the EdM and MBA groups. The LPI mean scores were based on the two new factors that emerged from the EFA. The model used to test the null hypothesis (H_0) is expressed as follows:

$$H_0 = \mu_1 = \mu_2$$

Table 2. Final two factor solution.

Item	New factor 1	New factor 2
No. Items	9	5
Cronbach α	.846	.781
Items	Loadings	
15. Reward people	.755	
20. Recognize people	.684	
21. Build consensus	.646	
22. Aspiration	.639	
23. Plan and assess	.561	
25. Celebrate accomplishments	.695	
26. Articulate leadership philosophy	.587	
27. Speak with purpose	.568	
30. Appreciate and support	.604	
2. Talk about the future		.662
7. Describe the future		.667
8. Challenge others		.678
13. Cross organizational boundaries		.539
16. Ask for feedback		.594

Source: Developed by the author.

Where:

μ_1 = MBA mean scores
μ_2 = EdM mean scores

The results from the independent samples t test for the two groups are noted in table 3. Based on these results, the EdM and MBA groups produced statistically significant differences in terms of *new factor 1* mean scores, which was consisted with the alternative hypothesis (H_1). However, no statistically significant differences were found between the two groups in sample in terms of *new factor 2*; therefore, H_0 was retained.

Discussion

Working under the assumption that the LPI factors may overlap, the first part of the analysis consisted of examining the structure of the instrument. EFA revealed that the LPI self, Spanish version, was a better fit to measure two TL dimensions with graduate students in Mexico. The two-factor solution is consistent with previous research on TL model, particularly research conducted by Carless (2001) and Heinitz et al., (2005). In these studies, the authors noted that TL questionnaires measure dimensions that overlap. Yukl (1999) argued that this was to be expected when working with TL models because the practices associated with this type of leadership often manifest through behaviors that are similar. Nonetheless, the results from this study suggest that the LPI, Spanish version, shows strong psychometric properties for two factors. This is a significant contribution to TL model research in educational contexts. In particular, leadership educators working in Spanish-speaking countries can be benefit from this finding because they can run their own analyses and create institutional or program-level assessment plans.

Regarding the intended purpose of this study, mean scores for the EdM and MBA groups showed statistically significant differences for *new factor 1* (see table 3), which measures behaviors associated with motivating others in pursuit of higher order goals and recognizing the work of others. This new factor can be

Table 3. Independent samples t test.

Factors	Levene's test of equality		MBA	EdM	Independent samples *t* test	
	F	*p*	*M(SD)*	*M(SD)*	*t*	*p*
New Factor 1	1.249	> .05	68.52(13.37)	74.72(11.20)	-3.203	< .01
New Factor 2	.954	> .05	32.92(8.41)	34.78(8.75)	-1.475	> .05

Source: Developed by the author.

described as charismatic leadership, given that the behaviors included in the construct are consistent with known descriptions of charismatic leaders (House, Spangler & Woycke, 1991; Fiol, Harris & House, 1999). The EdM group reported higher values than the MBA group, partially supporting H_1. However, the results for *new factor 2* were just as interesting. *New factor 2* measures behaviors associated with thinking outside the box and engaging in behaviors that challenge the status quo. These behaviors suggest leaders anticipate needed changes and establish conditions to adapt and fulfill these needs. Therefore, behaviors included in this factor are consistent with adaptive leadership (Heifetz, 1994) and with previous research on LPI scores in Mexico conducted by Robles, Garza de la and Medina (2008). The results from independent samples *t* test were not significant (see table 3), then, the EdM and MBA groups were not different in this last factor.

The low average scores for the two samples in terms of the new adaptive leadership factor may serve to support the claim that Mexican culture has traditionally been considered high on uncertainty avoidance, which suggest an unwillingness to take risks (Hidalgo et al., 2007). While this argument seems satisfactory on the surface, more research is needed on the matter. Taking these findings together, the contributions from the study can be articulated as follows:

▸ Educational leaders can support their programs by assessing their graduate students with the LPI Spanish version, which would allow them to identify their competence levels in terms of charismatic and adaptive leadership, two constructs associated with TL theory.

▸ Faculty and staff may develop an assessment plan consisting of two competencies, charismatic and adaptive leadership, which can be measured through the 14-item version of the LPI, perhaps using pre and post-test designs.

▸ Educational leaders can help prepare future generations of leaders in academic contexts by challenging their students to take risks and be proactive in the face of changing dynamics in education. This would help increase overall scores for the adaptive leadership factor.

▸ Educational leaders can take advantage of existing resources, like the leadership challenge literature by Kouzes and Posner (2012), to guide their educational strategies aimed at developing organizational leaders. This was evidenced by the present study.

▸ Researchers in the fields of leadership and education can base future studies on TL models and instruments to continue the discussion on the overlapping nature of TL dimensions.

▸ International scholars can develop their lines of inquiry by adapting the LPI in different languages, which would con-

tribute to the development of TL theory by identifying the appropriateness of different measures across cultures. This study engaged in adapting the LPI in its Spanish version.

The assessment plan to measure leadership efficacy with graduate students could be designed by establishing charismatic and adaptive leadership indicators throughout the curriculum, ensuring that students engage in exercises designed to build consensus among group members and promote shared values (charismatic leadership) while working in challenging and innovative tasks that requires them to take risks and provide innovative solutions (adaptive leadership). Continuity and direction can be reinforced through periodic applications of the adapted LPI, and results can be documented and shared through program-level-studies.

Conclusion

The results from this study contributed to the study of leadership in educational contexts in several ways. First, the LPI self, Spanish version, measures two factors associated with TL behaviors. Although the LPI in its original form was designed to measure five leadership factors through of one scale of 30 items, the results from this study suggest that some of the items and factors overlap, and educational leaders can use the two-factor solution (14-items scale) to conduct their assessments. Second, both EdM and MBA groups seem to score high on the first leadership factor, which measures behaviors associated with charismatic leadership. This finding was somewhat surprising given some of the criticisms directed at MBA program, namely that they tend to focus on functional knowledge rather than soft skill development. However, EdM students scored higher than the MBA group in the charismatic leadership factor. This suggests that educational leaders involved in teaching and coordinating management programs should consider reviewing their efforts to ensure that their students practice finding shared values among group members and aiming for higher-order goals. Moreover, no significant differences were identified for the adaptive leadership factor, but educational leaders should ensure that their programs offer opportunities to take risks and challenge established norms.

Concretely, educational leaders can use these findings to monitor leadership learning goals among graduate students by adopting the two-factor solution of the LPI. By assessing and sharing LPI results, faculty members can lead activities and discussions with students designed to help them identify specific behaviors that are worth developing. Moreover, educational leaders may use these results to provoke discussions among faculty members and how their teaching influences the development of

specific behaviors. For instance, faculty members can talk about how they create situations where their students are challenged to think outside of functional boundaries, take risks, question the *status quo* and become more comfortable when dealing with uncertainty. Moreover, faculty members can evaluate the effectiveness of their leadership courses by using the LPI to conduct pre and post-tests, and then examine the results to uncover significant differences. These suggestions can be implemented as part of a formal assessment plan or by implementing an *ad hoc* design that promotes learning. The goal should be to help graduate students develop their leadership competencies so they can help their current and future organizations perform above expected levels. At the very least, this would help educational leaders as they prepare their accreditation reports.

Although the findings presented here have practical applications, it is important to keep in mind that the results are not without limitations. The main limitation of this study was the geographic focus of the sample. By using the LPI Spanish version to conduct assessment practices, data from graduate students from different regions can be gathered, analyzed and compared. This ties to the second limitation, which was the use of a purposive sample of graduate students. Therefore, researchers are encouraged to do their own LPI analysis and adaptation before using their results to inform decision-making in their educational organizations.

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