

## DEVELOPMENT OF THE TEACHER LEADERSHIP STYLE SCALE

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Effective teacher leadership promotes not only students' motivation to learn, but also the productivity and development of educational institutions. My purpose in this study was to develop the Teacher Leadership Style Scale (TLSS) to extend the framework of the charismatic, ideological, and pragmatic (CIP) model of outstanding leadership. Participants were 264 Chinese college students in Macau. Data collection took place midway through the school year, and respondents took approximately 10 minutes to complete the questionnaire. The 29-item TLSS demonstrated high internal consistency ( $> .80$ ) and a robust 3-dimensional factor solution. Factor loading results showed that the instrument converged well with measures for 3 possible CIP-based teacher leadership styles. Overall, my results showed that the TLSS is suitable for assessing stable teacher leadership styles based on the perceptions of college students, and that it aligns with theoretical expectations.

*Keywords:* teacher leadership style, model of leadership, student–teacher relationships, motivation to learn, productivity, scale development.

Teacher leadership is a complex, multifaceted construct, the unifying feature of which is educational improvement via active involvement. This may operate on various levels, ranging from management of schools and the facilitation of a professional learning culture to improving classroom teaching and learning in order to boost students' academic achievement (Tsai, 2013; York-Barr & Duke, 2004). As such, Ahmed and Qazi (2011) concluded that effective teacher leadership promotes not only students' motivation to learn, but also the productivity and development of educational institutions.

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Numerous researchers have found that teacher leadership styles have considerable effects on students' performance in school (Beauchamp et al., 2014; Seritanondh, 2013) and on teacher and administrator effectiveness (Xu & Patmor, 2012). Kiliñç (2014) stated that teacher leaders facilitate learning and teaching for themselves and others, build effective communication among colleagues, and make use of opportunities to foster positive change in school environments.

York-Barr and Duke (2004) categorized the various strands of the existing teacher leadership literature into the following four categories: (a) benefits of employee participation in teacher leadership; (b) teaching and learning expertise; (c) acknowledgement, opportunities, and rewards for accomplished teachers; and (d) benefits to students. On the basis of this framework, York-Barr and Duke (2004) argued that greater teacher empowerment was needed to optimize school operations, thus leading to greater ownership of and commitment to goals for better school performance. The higher the motivation teacher leaders are able to maintain, the better they are able to provide learning opportunities, the better their teaching will be, and the better are the learning outcomes their students will attain (Tsai, 2005). In short, teacher leadership is critical to education reform.

In their comparison of teacher leadership with other types of leadership, York-Barr and Duke (2004) suggested that the former comprises at least four distinct conceptions, these being participative leadership, leadership as an organizational quality, distributed leadership, and parallel leadership. However, as Sinha, Hanuscin, Rebello, Muslu, and Cheng (2012) stated, the ultimate goal of teacher leadership is student learning; therefore, it should be practiced in meaningful ways within the sphere of daily classroom activities.

## Literature Review

A number of definitions of *teacher leadership* have been proposed in the literature. Leithwood's (1994) transformational school leadership theory includes four components: (a) building vision and setting directions, (b) developing people, (c) redesigning the organization, and (d) management of teaching and learning. In the similar context of transformational leadership, Anderson (2008) defined teacher leadership as "the process of influencing and direction setting of one teacher toward another" (p. 9). Using feedback from 20 school administrators and 60 teachers working in primary schools in Turkey, Can (2009) found that teacher leadership behaviors in these schools were associated with "determining goals, encouraging voluntary study, developing trust and vision, and determination [of policy] at an intermediate level" (p. 442). From the perspective of professional development, Sinha et al. (2012) viewed teacher leadership as a "particular type of relationship" that "mobilizes others to improve practice" (p. 13). As such, they argued that teacher leadership is a necessary catalyst for school improvement and that it is essential to sustaining curriculum reform.

Wells (2012) aimed to provide a working definition of teacher leadership regarding teachers' active influence upon school culture "as they gain skills and credibility in their work as master teachers" (p. 3). Harris and Muijs (2003) stated that teacher leadership consists of two dimensions, those of improving learning outcomes via development work and improving teaching via collaborative professional activity. Thus, they argued that teacher leadership is neither a role nor a task but, rather, "a form of agency where teachers are empowered to lead development work that impacts directly upon the quality of teaching and learning" (p. 40). Further, York-Barr and Duke (2004) conceptualized teacher leadership as knowledge of teaching and learning coupled with a commitment to continuous learning:

Conceptions of teacher leadership...highlight the use of teachers' expertise about teaching and learning to improve the culture and instruction in schools, such that student learning is enhanced. Such a view of teacher leadership involves leading among colleagues with a focus on instructional practice, as well as working at the organizational level to align personnel, fiscal, and material resources to improve teaching and learning. (p. 261)

DeHart (2011) suggested that although the concept of teacher leadership is popular in the literature, there are few available instruments that are designed especially for this context, and the established models devoted to this context are limited. In his review, DeHart found four existing measures of teacher leadership. First, Leithwood and Jantzi (1999) designed three items that teachers used to rate the extent of influence on school activities; however, the validity is of concern because such a small number of items was used. Second, Riel and Becker (2008) used three multipart survey questions, covering teaching, learning, and computing components; however, the reliability and validity of the measure were not assessed. Third, Cheng (2009) developed a nine-item questionnaire to measure teacher mentoring, school administration, and curriculum and instruction; again, no information about reliability and validity was provided. Finally, Angelle and DeHart (2010) designed a 17-item survey to investigate teachers' perceptions of teacher leadership within a school. DeHart (2011) further validated this measure in his study.

In short, although research on teacher leadership is still evolving, it is possible to delineate its core concept as "empowering teachers to take a more active role in school improvement" (Xu & Patmor, 2012, p. 252), as well as its major difference from other types of leadership, that is, the emphasis on the major functions of teaching and learning. My review of the above literature revealed few resources related to teacher leadership in a Chinese context; thus, I sought to fill this research gap. My purpose was to develop the Teacher Leadership Style Scale (TLSS) to extend the framework of the charismatic, ideological, and pragmatic (CIP) model of outstanding leadership (Bedell-Avers, Hunter,

& Mumford, 2008). I intended to contribute to a better understanding of teacher leadership, and provide implications for administrators and educational researchers who are engaged in fostering teacher leadership in schools.

### Theoretical Framework

Mumford and colleagues proposed the CIP model of outstanding leadership, in which leaders are divided into three types, charismatic, ideological, and pragmatic (see also Bedell-Avers, Hunter, Angie, Eubanks, & Mumford, 2009; Bedell-Avers et al., 2008; Ligon, Hunter, & Mumford, 2008; Lovelace & Hunter, 2013). Based on CIP theory, no one dominant leadership style is the most effective; rather, successful leadership is contingent upon context, and effective leaders are characterized by their use of a variety of mental models, cognitive orientations, and methods of influence. Bedell-Avers et al. (2008) observed that outstanding leaders arise from varying conditions of crisis, and stated that the key to understanding outstanding leadership is understanding the processes by which leaders approach these crisis situations. Further, they determined that sense-making is a central aspect of understanding outstanding leadership, and posited that leaders' sense-making stems from their mental models. For them, sense-making refers to leaders should help followers understand the crisis situation via goal attainment (Mumford, 2006).

Bedell-Avers et al. (2009) differentiated between charismatic, ideological, and pragmatic leaders in terms of five key mental-model features, these being crisis conditions, sense-making, type of experience, targets of influence, and locus of causation. *Charismatic leaders* tend to arise in ordered conditions, have a clear sense-making vision of the future, make their appeals based on positive types of experience, target the masses, and see people's actions as the locus of causation. In contrast, *ideological leaders* exist in chaotic conditions, base their sense-making on a clear vision of the past, appeal to negative experiences, target the lower social strata, and ascribe causation to situational influences. Finally, *pragmatic leaders* exist in localized conditions, use sense-making that revolves around problem solving, make their appeals based on both positive and negative experiences, target the social elite, and have loci of causation that include both people and situations.

More specifically, charismatic leaders prescribe future goals in an attempt to establish a shared vision and sense of identity to that which will influence their followers' decision making (Bedell-Avers et al., 2009). Generally, charismatic leaders have advanced communicative skills that enable them to engage their followers via emotional persuasion, positive feelings, eloquence, and conveying a sense that the leader will take care of followers' social and personal needs. Charismatic leaders' method of influence is usually an emotionally evocative one,

and they seek to change their followers' actions rather than their understanding of the situation (Bedell-Avers et al., 2009).

Often arising during chaotic situations, ideological leaders focus on a past vision and use examples of past failures to energize a core group of followers (Bedell-Avers et al., 2009). Such leaders make strong follower-based appeals using traditional shared beliefs and values, increase their influence through sharing their direction with key lieutenants, and tend to be skilled at problem solving of a type that conceptually integrates change or crisis with these shared ideals. In fact, the ideologue's vision is often framed as a mission, and demands rigid commitment or loyalty and tight group boundaries.

Pragmatic leaders stress neither goals and visions nor causes, instead focusing on current (usually local) issues in stable environments (Bedell-Avers et al., 2009). Pragmatic leaders are often viewed as functional problem solvers. They have the ability to develop workable solutions to problems by depending on logic and reason, rather than emotional arguments, to develop rapport with their followers; as such, a pragmatic leader's method of influence is often targeted toward elite groups that are interested in problems and solutions. Such leaders respect their followers' unique concerns, and appeal to their functional needs through negotiation.

## Method

### Participants

Convenience sampling was used to recruit 264 Chinese college students in Macau. Of these, 113 (42.8%) were men and 151 (57.2%) women, and their average age was 21.47 years ( $SD = 2.69$ ). They were drawn from two departments, Business ( $N = 82$ ; 31.1%) and Art and Design ( $N = 182$ ; 68.9%). There were 35 first-year undergraduate students (30.7%), 53 second-year undergraduates (33.7%), 94 third-year undergraduates (35.6%), and 82 graduate students (31.1%).

### Procedure and Measures

The TLSS was initially developed in Chinese and I later translated it into English (see Table 1), based on the CIP model of outstanding leadership, and, thus, included the same three major constructs of charismatic leadership, ideological leadership, and pragmatic leadership. The initial item pool included 30 items, with responses made on scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). An example charismatic leadership item is "My teacher has a fine sense of humor." For ideological leadership, an example item is "I feel that there is a cadre of followers in my class who have a good relationship with my teacher." For pragmatic leadership, one of the items is "My teacher uses negative examples from the past as important lessons."

I obtained approval for the study protocol from the ethics review board of my institution. In addition, in order to recruit a larger sample, I obtained permission from five instructors to collect data in their class. Before beginning the study, an informed consent form was distributed to the participants and the purpose of the study was explained. Data collection took place midway through the school year to ensure that the respondents had a sufficient frame of reference for assessing their teachers' leadership behaviors. Each participant completed the questionnaire, which also included two demographic questions, in approximately 10 minutes.

### Data Analysis

To develop a reliable and valid scale, I first conducted item and internal reliability analyses using corrected item-total correlations and Cronbach's alpha. After confirming the reliability of the TLSS, I employed exploratory factor analysis (EFA) for initial inspection of the factor analysis. Finally, I used confirmatory factor analysis (CFA) to further confirm the validity of the TLSS. EFA and CFA do not contradict each other and each has its own merits; thus, they complement each other for scale development purposes (Hurley et al., 1997). As a result, because of limited resources, I carried out both methods on the same group and then reported the results.

## Results

### Item Analysis and Internal Reliability

Table 1 shows the means, standard deviations, and corrected item-total correlations of the 30 items of the TLSS. The instrument's overall Cronbach's alpha was .97, which indicates excellent internal reliability. All corrected item-total correlations were over .30, which also indicates acceptable reliability of the instrument (Pallant, 2013).

Table 1. *Descriptive Analysis of the 30-Item Teacher Leadership Style Scale*

Variable	<i>M</i>	<i>SD</i>	Corrected item-total correlation
TLSS01: The interaction between my teacher and us in the classroom is good.	4.29	0.89	.712
TLSS02: My teacher has a fine sense of humor.	4.23	0.92	.739
TLSS03: I respect the behavior of my teacher.	4.35	0.81	.734
TLSS04: It is pleasure to get along with my teacher.	4.30	0.89	.726
TLSS05: My teacher is concerned about the vulnerable students in my class.	4.03	1.11	.720
TLSS06: My teacher is actively concerned about students' problems and listens to them.	4.19	0.97	.770

Table 1 continued

Variable	<i>M</i>	<i>SD</i>	Corrected item-total correlation
TLSS07: My teacher discusses positive things with us, such as future dreams.	3.99	1.02	.783
TLSS08: My teacher often encourages us to think about the future and prepare for it.	4.06	1.00	.768
TLSS09: My teacher often expresses high expectations for our work with other students.	4.03	1.01	.778
TLSS10: There is an atmosphere of caring and trust in teacher–student relationships.	4.24	0.89	.797
TLSS11: My teacher discusses important issues with us in order to arrive at a solution.	4.14	0.91	.791
TLSS12: My teacher specifically tells us what achievements we can attain and believes that we can succeed.	4.13	0.92	.784
TLSS13: My teacher uses negative examples from the past as important lessons during our discussions.	3.77	1.13	.639
TLSS14: My teacher inspires us to learn.	4.05	0.96	.777
TLSS15: My teacher encourages collaborative teamwork for the purposes of discussing and solving problems.	4.18	0.97	.633
TLSS16: When we have group discussions, my teacher encourages us to share our thoughts.	4.20	0.91	.791
TLSS17: When solving problems, my teacher stresses different solutions according to our different characteristics.	4.10	0.92	.808
TLSS18: When dealing with issues related to our class, my teacher considers individual differences among the students.	4.02	0.99	.799
TLSS19: I feel that there is a cadre of followers in my class who have a good relationship with my teacher.	3.40	1.37	.398
TLSS20: My teacher often discusses things with certain groups of students after class.	3.47	1.25	.491
TLSS21: My teacher tries to discover our problems and then provides the necessary help to deal with them.	4.00	0.99	.771
TLSS22: My teacher discusses all kinds of phenomena in society.	3.94	1.00	.664
TLSS23: My teacher encourages us to consider issues from a variety of viewpoints.	4.23	0.84	.727
TLSS24: My teacher expects us to constantly improve our level of professionalism.	4.19	0.90	.758
TLSS25: My teacher often stresses logical and rational thinking.	4.09	0.92	.790
TLSS26: I feel that my teacher is willing to provide useful assistance to my classmates to help them solve problems.	4.24	0.90	.759
TLSS27: My teacher likes to discuss things pragmatically.	4.09	0.94	.768
TLSS28: When we discuss a topic, my teacher helps us to understand its complexity, viewing it from two perspectives: people and systems.	3.96	1.00	.758
TLSS29: I feel that my teacher prefers to assign learning opportunities to the good students.	3.31	1.38	.393
TLSS30: I feel that the good students in my class comply with and support the teacher’s guidance and suggestions.	3.66	1.25	.540

Note. TLSS = Teacher Leadership Style Scale.

### Exploratory Factor Analysis

Using SPSS version 22.0, the 30 items of the TLSS were subjected to principal components analysis with varimax rotation. The Kaiser-Meyer-Olkin value was .964 and Bartlett's test of sphericity reached statistical significance, supporting the factorability of the correlation matrix. The results show the presence of two components with eigenvalues exceeding 1, explaining 50.30% and 14.71% of the variance, respectively. For the purpose of this study, a factor loading of .45 (20% overlapping variance) was used as the cut-off point (Tabachnick & Fidell, 2007). When I identified the significant loadings for each variable, two items (13 and 28) had more than one significant loading, making them candidates for deletion. When I assessed the communalities of the variables, two additional items (15 and 22) had values of less than .50, indicating that they did not have sufficient explanatory value.

Because my goal was to obtain theoretically meaningful factors and then determine the extent to which they were orthogonal, I decided to use an oblique (oblimin) rotation to perform a subsequent principal components factor analysis; this limited the number of factors to three (Hair, Black, Babin, Anderson, & Tatham, 2006). As shown in Table 2, item 21 was dropped because its factor loadings were less than .45. No cross-loadings were found, and all communalities were over .50. Factor one comprises 14 items, factor two, four items, and factor three, 11 items, fitting the requirement that there be at least three items per construct (Hair et al., 2006).

Table 2. *Oblimin-Rotated Principal Components Factor Analysis of the 29-Item Teacher Leadership Style Scale*

Variable	Factor			Communality
	1	2	3	
TLSS01	.945			.719
TLSS02	.830			.676
TLSS03	.758			.697
TLSS04	.836			.706
TLSS05	.789			.631
TLSS06	.888			.748
TLSS07	.681			.677
TLSS08	.532			.661
TLSS09	.617			.665
TLSS10	.830			.758
TLSS11	.539			.695
TLSS12	.522			.673
TLSS13		-.589	.584	
TLSS14		-.533	.661	

Table 2 continued

Variable	Factor			Communality
	1	2	3	
TLSS15		-.673	.501	
TLSS16		-.502	.708	
TLSS17	.473			.700
TLSS18		-.460	.685	
TLSS19	.864		.726	
TLSS20	.819		.726	
TLSS22		-.841	.591	
TLSS23		-.781	.688	
TLSS24		-.629	.684	
TLSS25		-.682	.719	
TLSS26	.494			.687
TLSS27		-.702	.679	
TLSS28		-.613	.657	
TLSS29	.913		.796	
TLSS30	.784		.708	
Sum of squared loadings	14.45	5.38	13.91	33.74

Note. Factor loadings under .45 are not included in the table.

### Confirmatory Factor Analysis

To better understand how well my specification of the factors matched the data, I used CFA to test my measurement theory. The scale's 29 measured indicator variables and three latent constructs are shown in Figure 1. Overall model fit and construct validity were also both examined. Results showed that chi square ( $\chi^2$ ) = 649.65, degrees of freedom ( $df$ ) = 340,  $p < .001$ ,  $\chi^2/df = 1.911$ , goodness-of-fit index = .858, comparative fit index (CFI) = .953, normed fit index = .908, root mean square error of approximation (RMSEA) = .059, and standardized root mean square residual SRMR = .054. These results meet the guidelines developed by Hair et al. (2006) for establishing acceptable model fit, where significant  $p$  values can be expected, of CFI > .92, SRMR < .08, and RMSEA < .07. Taking into account my sample size of 260 and the number of observed variables (i.e., 29), the CFA results suggest that the TLSS measurement model provided a reasonably good fit.

To assess the construct validity of the TLSS, I examined convergent validity (see Table 3). The maximum likelihood factor loading estimates indicated that all loadings were over .50 and that variance-extracted measures exceeded 50%; that is, my model had adequate convergent validity. In addition, the estimates of construct reliability were over .70, indicating adequate internal consistency.

Table 3. *Teacher Leadership Style Scale Standardized Factor Loadings, Variance Extracted, and Reliability Estimates*

Variable	Factor		
	Charismatic leader	Ideological leader	Pragmatic leader
TLSS01	.777		
TLSS02	.768		
TLSS03	.792		
TLSS04	.787		
TLSS05	.751		
TLSS06	.830		
TLSS07	.789		
TLSS08	.792		
TLSS09	.788		
TLSS10	.831		
TLSS11	.839		
TLSS12	.812		
TLSS17	.832		
TLSS26	.826		
TLSS19		.813	
TLSS20		.806	
TLSS29		.816	
TLSS30		.763	
TLSS13			.611
TLSS14			.803
TLSS15			.651
TLSS16			.843
TLSS18			.838
TLSS22			.676
TLSS23			.772
TLSS24			.807
TLSS25			.836
TLSS27			.802
TLSS28			.766
Variance extracted	64.2%	64.0%	59.0%
Construct reliability	.96	.88	.94

*Note.* TLSS = Teacher Leadership Style Scale.

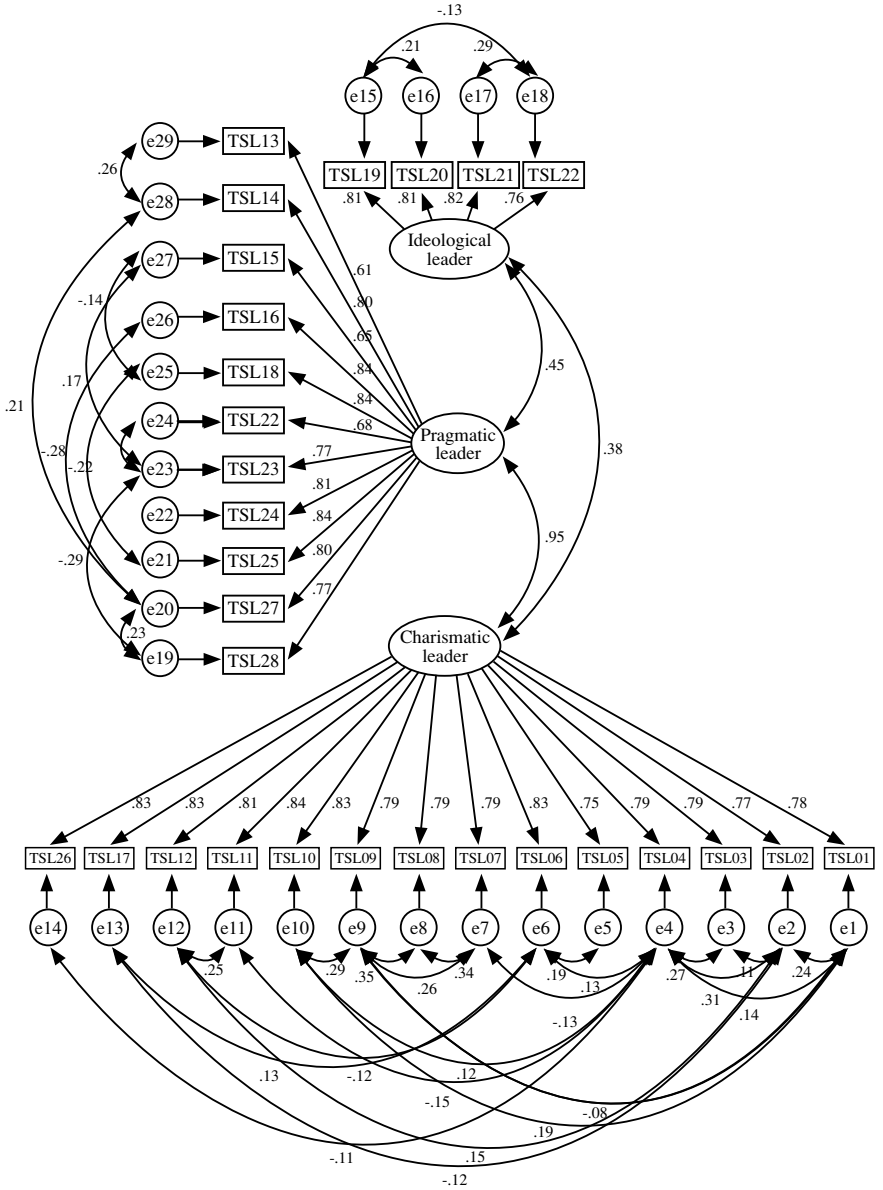


Figure 1. Measurement model of teacher leadership style.  
 Note. TLSS = Teacher Leadership Style Scale.

## Discussion

The TLSS was developed primarily as a research tool, and my results suggest that it has major potential for use in research conducted in educational settings. This typology of teacher leadership could become an important tool for teachers' self-assessment and may help to improve theoretical understanding of the influence of teacher leadership on students' learning and academic success. The TLSS may also prove useful in predicting a wide range of attitudes and behaviors, or even aid in the placement of students in courses and of teachers in job assignments.

The TLSS demonstrated high internal consistency ( $> .80$ ) and a robust three-dimensional factor solution. On the basis of the factor loading results, the instrument converges well with measures for three possible CIP-based teacher leadership styles. Overall, my initial work on the TLSS indicates that it is suitable for assessing stable teacher leadership styles based on the perceptions of college students and that it is in line with theoretical expectations.

In summary, my development of the TLSS based on the CIP model seems to support Bedell-Avers and colleagues' (2008, 2009) theory about outstanding leadership (see also Ligon et al., 2008). My empirical results suggest that the notion of outstanding leadership can be used in the educational context. Most important, the unique contribution of this study is that I have gone beyond the CIP model to develop a valid measure of teacher leadership.

In spite of the potential contributions, limitations to this study should also be recognized. First, teacher leadership style was assessed through students' observations, rather than objective measurement; thus, my results do not provide any evidence of causality. Second, the sample used was relatively homogeneous, comprising Chinese students from one institution in Macau. Future researchers could recruit participants from different age and ethnic groups for further validation of the TLSS. Finally, I used a relatively short timeframe in which to examine perceptions of teacher leadership styles. Research in which a longer sampling frame of 6 months or more is used would appear to be warranted.

The TLSS enables researchers to study teacher leadership style in an economical way. As it consists of only 29 items, it can be implemented quickly and easily in larger test batteries, and can also be used for practical applications. The results suggest that the TLSS is reliable and valid, and I believe that its development will be especially beneficial for educators seeking to identify their own leadership styles as part of a wider goal of positively influencing their students.

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