

## Integrating Learner Centeredness and Teacher Performance in a Framework

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The study investigated whether learner-centeredness is reflected in teacher performance assessment as applied in a higher education sample. A measure of teachers' performance anchored on Danielson's Components of Professional Practice was constructed in three parallel forms. A measure of learner-centeredness with four factors (developing positive interpersonal characteristics, encouraging personal challenge, adopting class learning needs, and facilitating the learning process) was also used. These two instruments were administered to 2,032 college students in 85 classes. Different sets of measurement models were constructed where all factors of the teacher assessment and learner-centered scale are intercorrelated in a measurement model. The measurement models were tested using Confirmatory Factor Analysis (CFA). The results showed that learner-centeredness is reflected in the three forms of the teacher assessment as indicated by their significant paths,  $p < .05$ . The four-factor model, where learner-centeredness is related to each form of the teacher assessment had the best fit ( $GFI=.94$ ,  $TLI=.98$ ,  $RMSEA=.06$ ). Adequate fit was also established when learner-centeredness is related to separate domains of teacher assessment ( $GFI=.97$ ,  $TLI=.99$ ,  $RMSEA=.04$ ). Results indicated that high performance in the constructed teacher assessment is indicative of learner-centered practices. Theoretical implications of the measurement models about assessment and the teaching-learning paradigm were also discussed.

There is a growing awareness that schools and teachers need to shift their practice from the traditional teacher-centered approach to a more learner-centered approach. The learner-centered approach shows many advantages since it is based on psychological theories about learning from past decades of studies about the teaching and learning process. Faculty in higher education need to realize that using a learner-centered approach is shown to ensure success in students' learning (Brown, 2003; Hewett, 2003). However, not all teaching faculties are oriented towards this pedagogy.

One way to determine the status of schools in their shift to a learner-centered approach is by looking at the assessment of both the teaching and the learning process. Making available well-calibrated measures for the teaching and learning process can reflect how learner-centered a classroom is.

There is still ambiguity in the conception of assessing effective teaching and teaching performance. The majority of studies still use the concepts of "effective teaching" and "teaching performance" synonymously based on the assumption that high performance scores in teaching guarantee effectiveness in teaching (Allison-Jones & Hirt, 2004; Dean, Lauer, & Urquhart, 2005; Finch, Helms, & Etkin, 1997; Hammond, 2006; Pike, 1998). However, Magno and Sembrano (2007) demonstrated that in teaching, high performance ratings of a teacher (on their teaching performance) is not indicative of their effectiveness in promoting learning as perceived by the students. This idea is supported by their results which showed that learner-centeredness affects teaching effectiveness but not on measures of performance. If the learner-centered

approach continues to be used in the teaching and learning process, then there is a need to construct and redirect measures of teaching that will reflect its components (Huba & Freed, 2000). The present study investigated whether learner-centeredness can be reflected in a teacher performance assessment using the constructed Student Teachers' Assessment Report (STAR) used by college students. The specific questions that were addressed in the study are as follows: (1) Is learner-centeredness reflected in the same way with three parallel teaching assessment forms? (2) Which teaching assessment form most reflects learner-centeredness? (3) Which specific domain in a particular assessment form reflects learner-centeredness better? (4) Is the connection between learner-centeredness and teaching performance well-represented in a college sample?

### **The Advantages of Adapting Learner-Centeredness**

The essential characteristic of a learner-centered approach is considering the needs of the learners. Having identified the learners' needs enables educators to adjust the classroom situation to facilitate their achievement (McCombs, 1997). One major characteristic of the learner-centered approach is emphasizing diversity among learners where the low performing learners are taken into consideration (Brown, 2003). Milambiling (2002) characterized learner-centeredness as context-sensitive. This means that culture is taken into consideration where the content and methods used in teaching are made appropriate for each kind of learner.

### **Do Existing Teacher Performance Assessments Reflect Learner-centeredness?**

The researchers described assessment in a learner-centered perspective via two dimensions: First, in terms of the function of assessment in the teaching and learning process. Second, in the direction of the assessment from: (a) teacher assessing the student, to (b) student learning as a feedback for teaching, and to (c) students' assessing their own learning. According to Huba and Freed (2000), when schools try to adopt a learner-centered approach in their curriculum, it necessitates the need to shift the assessment of teaching and learning. The assessment of learning should change from the traditional perspective of using only summative assessment as a way of marking students' grades and emphasizing grades as an outcome of one's learning (Rover, 2004). Instead, the function of assessment in a learner-centered paradigm should be viewed not only as an outcome but (a) as a helpful source where teachers give feedback to students regarding the skills that they still need to improve on, (b) a guide of what students can do after learning, and (c) a sample of successful experiences of students due to learning.

In terms of the direction of assessment, a learner-centered paradigm allows feedback on how well the teaching is facilitating the learning process. Feedback in a learner-centered paradigm also incorporates students making feedbacks on their own learning. Self-monitoring is easily developed among college students because of their advanced abilities as compared to the lower grade levels. This self-monitoring process enables college students to generate their own thoughts (self-regulation), become aware of their own learning (metacognition), and manage their own learning. This shift in assessment in a learner-centered paradigm is explained by Weimer (2002) with a larger and balanced purpose. Assessment and evaluation in a learner-centered paradigm involves students with a more active role.

The new directions of teacher-performance assessment where teachers use a learner-centered approach centers not only on a set of teacher behavior and characteristics but also indicates students' learning and their process of learning (Anderson et al., 1992; Doyle, 2008; Weinberger & McCombs, 2003). According to McCombs and Whisler (1997), the essential components of assessing teacher performance in a learner-centered approach include teaching practices that show appropriate teacher behavior in creating a positive learning environment. One aspect of the Learner-Centered Psychological Principles (LCPs) (APA Work Group of the Board of Educational Affairs, 1997) includes "standards of assessment." This principle indicates that: (a) High and challenging

standards should be set, and (b) assessing the learner as well as the learner's progress including diagnostic, process, and outcome assessment are integral parts of the learning process. Furthermore, assessment in this principle is described as:

Assessment provides important information to both the learner and teacher at all stages of the learning process. Effective learning takes place when learners feel challenged to work towards appropriately high goals; therefore, appraisal of the learner's cognitive strengths and weaknesses, as well as current knowledge and skills, is important for the selection of instructional materials of an optimal degree of difficulty. Ongoing assessment of the learner's understanding of the curricular material can provide valuable feedback to both learners and teachers about progress toward the learning goals. Standardized assessment of learner progress and outcome assessment provides one type of information about achievement levels both within and across individuals that can inform various types of programmatic decisions. Performance assessments can provide other sources of information about the attainment of learning outcomes. Self-assessments of learning progress can also improve students' self-appraisal skills and enhance motivation and self-directed learning (p. 7).

The principle on assessment standards emphasizes both the process and outcome of learning. This implies that teacher performance should be assessed reflecting how students demonstrate their learning. Examples of criteria under this include when the teacher "provides time for students to reflect the things learned," and "asks students to monitor their own performance" (see Magno & Sembrano, 2007). Instead of focusing too much on teacher's behavior such as "keeping the class quiet" and "wears uniform all of the time," the criteria can focus on the learner's information processing as facilitated by the teacher.

The Assessment of Learner-Centered Practice (ALCP) is an instrument that surveys teacher characteristics and beliefs and their consistency with the LCPs. McCombs (1997) described the ALCP as a research-validated tool to self-assess the degree to which classroom practices are in keeping with the LCPs in the four domains. The four domains are shown by current research to be related to positive student motivation and achievement (e.g., McCombs, 1999b, 2001). These four domains were used by Magno and Sembrano (2007) to create items that measure the degree to which a teacher practices learner-centeredness in the classroom. The domains are: (1) Positive interpersonal characteristics – the items reflect the

ability to develop positive interpersonal relationships with students and the instructor's ability to value and respect students as persons; (2) Encourages personal challenge – the items show how students are expected to take charge of their learning; (3) Adapts class learning needs – the items show the ability to be flexible in order to address students' needs; (4) Facilitates the learning process – the items reflect the instructor's ability to encourage students to monitor their own learning process. The internal consistency of the items using Cronbach's alpha are .99, .98, .98 and .99, respectively. A measurement model was tested using Confirmatory Factor Analysis with these four components, and all showed significant estimates with adequate goodness of fit indices (see Magno & Sembrano, 2007).

According to McCombs (1997), assessing teacher performance through a learner-centered focus is not only meant to improve teacher performance on different aspects, but also to enable teachers to undergo a process of reflection. The reflection process "will help to identify the personal characteristics and practices that must change to improve motivation and achievement for each student" (p. 1). This shows that a high rating through a summative assessment on teaching performance in one school year is meaningless if students have not demonstrated the necessary skills that reflect learning. The reflection of learning indicates students' increased motivation, awareness and continued generation of one's learning processes, as well as establishing goals to further learning for those who are underachieving (Elliot & Church, 1997; Paris & Paris, 2001; Pintrich, 2003; Zimmerman, 2002).

Consistent findings show that when teachers structure their curriculum in a learner-centered perspective, students achieve desired goals and are more likely to develop to their full potential (ex. Sariscsany, 2005; Yeung & Watkins, 2000). McCombs (1997) found that the more learner-centered a student perceived a teacher to be (e.g. made an effort to get to know him/her personally), the more positive is the student's motivation in class as measured by seven different motivation scales. Furthermore, students who perceived their teacher as creating a positive personal climate in class were able to achieve more in terms of classroom performance than students who did not believe their teacher was creating this positive climate.

The majority of the teacher performance assessments that have been published are outside the field of education and psychological measurement and are prominent in such fields such as business and economics. The trend in the development of teaching performance assessment has decreased with the onset of the 21st century because the components (factors in measures) of effective teaching have been established in the last decades. Assessments designed to determine

effective teachers should focus on methods and principles that improve the teaching and the learning process. In developing assessment tools for teacher performance, the criteria/components that are best adapted will depend mostly on what the context is asking for. It can be grounded on the school's philosophy, mission, vision, and other directives. Another important issue that needs to be answered is what teachers need to know to make their performance better. According to Behar-Horenstein, Pajares, and George (1995), teacher assessment results should also engage teachers to reflect about: (1) Believing in the need for change, (2) their willingness and ability to modify their practices, (3) having opportunities to see models of the required change, (4) having an administration and school that supports the change, (5) holding accountability for maintaining practices consistent with current views of learning, and (6) providing instructional guidance.

There are 12 empirical reports that publish studies on constructing teacher performance assessment in various fields such as education, engineering, and nursing education (Allison-Jones & Hirt, 2004; Centra, 1998; Heckert, Latier, Ringwald, & Silvey, 2006; Howard, Helms, & Lawrence, 1997; Li-Ping Tang, 1997; Marsh & Bailey, 1993; Pike, 1998; Scriven, 1994; Stringer & Irwing, 1998; Wanous & Hudy, 2001; Young & Shaw, 1999). These studies were selected since they illustrated the detailed properties of constructed assessment instruments. These instruments are widely used and validated across cultures. There were nine common components found among these published rating scales for teachers: (1) Presentation of content; (2) relevance and value of course; (3) organization, planning, preparedness, and classroom management; (4) knowledge of course content; (5) student and teacher interaction; (6) instructional/ pedagogical design; (7) student assessment; (8) communication; and (9) professional duties. Careful examination of the content of these factors shows that they are still anchored on traditional paradigms of teaching and learning. There is still much work needing to be done to create instruments and further frameworks for assessing teaching performance that adopt a more constructivist view of learning. A constructivist view of learning means that students are "knowledge seekers, they develop their own theories about the world around them, and continually subject their theories to tests. They perform experiments on their own. They engage in knowledge extending and knowledge refining activities spontaneously, arguing with themselves via internal dialogue. They question the veracity or range of applicability of their theories, perform thought experiments, question their own basic assumptions, provide counterexamples to their own rules, and reason based on the available knowledge that they have" (Flavell, 1992, p. 998).

The Components of Professional Practice framework created by Danielson (1996) provides a constructivist perspective on teaching. The expectation is that teaching focuses on designing activities and assignments that can engage students in constructing important knowledge. A corollary of this expectation, which gives support to the belief in teaching as a profession, is that decisions that teachers make in designing and executing instructional plans are far from trivial, and that activities and assignments are not chosen merely because they are fun. The educational significance of students being on task in a class rests on the presumption that the activity is serving an instructional purpose. The components are grounded in the assumption that even though good teachers may accomplish many of the same things, they do not achieve them in the same way. Therefore, a list of specific behaviors is not appropriate. Rather, what is needed is a set of commonalities underlying the actions with the recognition that specific actions will and should vary depending on the context and the individual. These common themes represent the effects achieved rather than the specific actions taken. The domains and components of professional practice are:

Domain 1: Planning and Preparation - demonstrating knowledge of content and pedagogy, demonstrating knowledge of students, selecting instructional goals, demonstrating knowledge of resources, designing coherent instruction, and assessing student learning;

Domain 2: The Classroom Environment – creating an environment of respect and rapport, establishing a culture for learning, managing classroom procedures, managing student behavior, and organizing physical space;

Domain 3: Instruction – communicating clearly and accurately, using questioning and discussion techniques, engaging students in learning, providing feedback to students, and demonstrating flexibility and responsiveness;

Domain 4: Professional Responsibilities – reflecting on teaching, maintaining accurate records, communicating with families, contributing to the school and district, growing and developing professionally, and showing professionalism.

Danielson's Framework for Teaching has been adopted by school districts, state certification departments, and universities worldwide but not much in the Philippine educational context. In the present study, it was used to assess in-service teachers in higher education, both non-tenured and tenured. The

framework also aligns with the Interstate New Teacher Assessment and Support Consortium (INTASC) standards and the National Board for Professional Teaching Standards (NBPTS) in the United States of America (Danielson, 1996). Danielson's components of professional practice in teaching were used in the present study to construct the teacher performance assessment tool. The applicability of the domains and components of the framework are also tested for higher education using a Filipino college sample.

## Method

### Participants

There were 2032 participants from 85 classes who participated in the study. These participants were college students (first to more than fifth year of their stay in college) from a higher education institution in Manila (Philippines) adopting the learner-centered paradigm. There is an average of 23.91 students in each class. The age of the participants range from 16 to 22 years old.

### Instruments

**Learner-Centered Practices Questionnaire (LCPQ).** The LCPQ was constructed by Magno and Sembrano (2007) and measures the four dimensions of learner-centered practices of teachers as rated by students. The LCPQ is based on the principles of the learner-centered practices by McCombs (1997). The items were constructed under the areas of: 1) positive interpersonal characteristics (items 1 to 5); 2) encourages personal challenge (items 6 to 10); 3) adopts class learning needs (items 11 to 15); and 4) facilitates the learning process (items 16 to 19). The scale uses a nine-point Likert scale from 1 to 9, with 9 as "strongly agree" and 1 as "strongly disagree." The overall reliability of the scale is .99 indicating high internal consistency of the items. The confirmatory factor analysis conducted proved the factor structure of the four areas of learner-centered practices.

**Students' Teacher Assessment Report (STAR).** The STAR generally assesses teacher performance and is anchored on Danielson's Components of Professional Practice (1996). The items during the construction were also anchored in every learner-centered principle of the APA. The scale uses a four-point Likert scale where: 4-Strongly agree, 3-Agree, 2-Disagree, 1-Strongly disagree. Specific items which totaled to 93 were created under each domain of the four major components (planning and preparation, classroom environment, instruction, and professional responsibility). The internal consistency of all the items

is .99 indicating a very high reliability. The Cronbach's alpha for each subscale for the first pilot test (N=403) are .91 for planning and preparation (13 items), .97 for classroom environment (38 items), .97 for instruction (36 items), and .83 for responsibility (6 items). Parallel forms of reliability were also established where the items were split into three forms for each of the components. The intercorrelations of the subscales across the three forms showed that the items appropriately converge with each other, indicating that they measure the same construct. Both exploratory and confirmatory factor analysis were used and the items remained within their original domains.

### Procedure

Testing personnel were trained to administer the STAR and the LCPQ to effectively carry out the instructions. Standard operational procedures were implemented such as: Dress code, voice quality, and material preparation. The STAR and LCPQ were administered to 2032 students from different classes. The administration was conducted during the 8th to 9th week of the term (there are 13 weeks in a term). After answering the LCPQ, the students were instructed to answer the STAR. In some instances the order of the two instruments were counterbalanced to control for possible sequencing effect. For answering the STAR, the questionnaire was provided and students were instructed to answer on a scannable answer sheet. After the students answered, the questionnaire and answer sheets were collected and the students were debriefed about the purpose of the study.

### Data Analysis

The measurement models of the latent factors Learner-centeredness (LCPQ) and Teacher Performance (STAR) were established using Confirmatory Factor Analysis. The parameter estimates of the loading for each latent factor were assessed for significance. The goodness of fit of the measurement models was also compared. Three measurement models were tested: (1) The first is a one-factor model where all subscales of the LCPQ and STAR are placed in one latent construct; (2) The second is a two common factor model where LCPQ and STAR are two latent constructs correlated; and (3) The third measurement model is a four factor model where LCPQ as one latent construct is correlated with each of the forms of the STAR as three separate latent constructs. The goodness of fit indices of these four measurement models were compared by arranging the Root Mean Square Error Approximation (RMSEA) from highest to lowest. The differences of chi-square arranged by succession of the measurement models were reported. The measurement

model with the largest difference in chi-square is said to have the best fit (Kenny & Kashy, 1992).

Noncentrality and Single Sample Fit Indices were also used to evaluate the goodness of fit of the three models. The noncentrality measures represent a change of emphasis in assessing model fit. Instead of testing the hypothesis that the fit is perfect, it tests how bad is the fit of the model in reference to the statistical population and how accurate is the population badness-of-fit from the sample data. The obtained Root Mean Square Error Approximation (RMSEA) measure was used to determine the best fitting model. Values of the RMSEA index below .05 indicate good fit, and values below .01 indicate outstanding fit (Steiger, Shapiro, & Browne, 1985). The RMSEA compensates for model parsimony by dividing the estimate of the population noncentrality parameter by the degrees of freedom.

Single sample goodness of fit indices were also used to evaluate the models. The noncentrality fit indices used to assess the models were: Joreskog (GFI and AGFI: Values above .95 indicate good fit), Bentler-Bonett, Relative Fit Index/Bollen's rho (RFI: values close to 1 indicate a relatively good fit), Incremental Fit Index/Bollen's delta (IFI: values close to 1 indicate a relatively good fit), and Comparative Fit Index/McDonald's Fit index (CFI: values close to 1 indicate a relatively good fit, values above .95 are acceptable) (Browne & Cudeck, 1989).

To determine the invariance of all the measurement models, the Maximum Likelihood Chi-square ( $\chi^2$ : the minimized discrepancy function is the most fitted model; discrepancy function =  $\chi^2/df$ , values of 5 and below are good fit), Akaike Information Criterion (AIC: the smallest Akaike criterion is chosen over other several models), Schwarz's Bayesian Criterion (The smallest Schwarz's Criterion value is chosen over other several models), and Browne-Cudeck Cross Validation Index (better models will have smaller cross-validation indices) were compared. These indices were compared to determine the best model in explaining the relationship between learner-centeredness and components of the teacher performance scores. Differences among the Chi-square goodness of fit parameters were compared across measurement models to identify the change in goodness of fit (Anderson & Gerbing, 1988).

### Results

The means and standard deviations of the LCPQ and the three forms of the STAR were obtained. The specific subscales of the LCPQ and the STAR were also intercorrelated. Three measurement models were made to determine whether learner-centeredness can be reflected in the created measure for teacher performance. The goodness of fit of these three models was also compared (see Table 1).

Table 1  
Mean and Standard Deviation of the STAR Scales

	M	SD	alpha <sup>a</sup>
STAR Form A			.97
Domain 1	3.29	0.53	.89
Domain 2	3.29	0.50	.92
Domain 3	3.25	0.54	.92
Domain 4	3.26	0.62	.72
STAR Form B			.97
Domain 1	3.28	0.52	.84
Domain 2	3.29	0.52	.93
Domain 3	3.27	0.53	.92
Domain 4	3.27	0.61	.70
STAR Form C			.97
Domain 1	3.29	0.56	.87
Domain 2	3.28	0.51	.92
Domain 3	3.27	0.53	.93
Domain 4	3.26	0.59	.70
Learner-centeredness			.98
Positive Interpersonal Characteristics	7.09	1.73	.95
Encourages Personal Challenge	7.12	1.64	.94
Adopts Class Learning Needs	6.87	1.81	.93
Facilitates the Learning Process	7.06	1.80	.95

Note: Domain 1=Planning and preparation, Domain 2=Classroom environment, Domain 3=Instruction, Domain 4=Professional responsibility; n = 2032 for all rows

<sup>a</sup> Cronbach's alpha

The means for the three forms across domains of the teacher performance assessment (STAR) are high, which is close to the ceiling score of 4.0. The participants who used the assessment for their teachers tend to be consistent in their ratings given the low variation in the scores as indicated in the standard deviations. For the learner-centeredness, the means were also high, but the subscale on "adapts to class learning needs" is not as high as the other scales. Higher variations in scores were obtained for the learner-centered scales due to the longer scale length (nine-point scale). The Cronbach's alpha values for all subscales of the STAR and especially the LCPC indicates very high internal consistency among the items.

To establish the relationship of the different components across domains, and the three forms of the STAR with the learner-centeredness, Pearson r was used (see Table 2).

The results of the intercorrelations show that all domains of the four STAR forms are significantly related to each other,  $p < .05$ . The strength of the relationship among all the forms ranges from low to moderate, which means that the components are not really multicollinear.

In the same way, the factors of learner-centeredness are all significantly related with all factors of the STAR in all forms,  $p < .05$ . The correlation coefficients of the subscales of the LCPQ when intercorrelated had a very high relationship.

There were three measurement models that were tested to determine how learner-centeredness is best reflected in the teacher performance assessment as measured by the STAR. The first model is a one-factor measurement model where all the subscales of the LCPQ and STAR in all forms are placed in one latent construct. The second model is a two-factor measurement model where learner-centeredness and STAR are in two separate latent constructs. The third model is a four factor measurement model where the three forms of the STAR are placed as separate latent constructs (see Figure 1).

In the first measurement model, all the subscales of the LCPQ and STAR in all three forms significantly loaded in one latent construct,  $p < .001$ . The minimum chi-square value is  $\chi^2 = 5857.45$ ,  $df = 104$  and its discrepancy function is 56.32, which is a bad fit for the model. However, the Root Mean Square ( $RMR = .19$ ,  $RMSEA = .16$ ), and  $GFI = .70$  and  $AGFI = .61$  indicate that the model shows an inadequate fit. The results in using Bentler-Bonnet's Normed Fit Index ( $NFI = .78$ ), Relative Fit Index ( $RFI = .88$ ), Incremental Fit Index ( $IFI = .90$ ), and Comparative Fit Index ( $CFI = .90$ ) show estimates far from goodness of fit (see Figure 2).

In the second measurement model, the LCPQ and the STAR are significantly related as two latent constructs,  $p < .001$ . Their subscales also significantly load to their respective factors,  $p < .05$ . The minimum chi-square value is  $\chi^2 = 1095.47$ ,  $df = 103$  and its discrepancy function is 10.64, which is a bad fit. The Root Mean Square ( $RMR = .01$ ,  $RMSEA = .07$ ), and  $GFI = .93$  and  $AGFI = .91$  indicate that the model shows an almost adequate fit. However, the results in using Bentler-Bonnet's Normed Fit Index ( $NFI = .98$ ), Relative Fit Index ( $RFI = .98$ ), Incremental Fit Index ( $IFI = .98$ ), and Comparative Fit Index ( $CFI = .98$ ) show estimates with somewhat acceptable fit (see Figure 3).

In the third measurement model, all forms of the STAR and the LCPQ are significantly related as latent constructs,  $p < .001$ . Their subscales also significantly load to their respective factors,  $p < .001$ . The minimum chi-square value is  $\chi^2 = 1016.07$ ,  $df = 98$  and its discrepancy function is 10.37, which is a bad fit for the model. However, the Root Mean Square ( $RMR = .01$ ,  $RMSEA = .06$ ), and  $GFI = .94$  and  $AGFI = .91$  indicate that the model has an adequate fit. The results in using Bentler-Bonnet's Normed Fit Index ( $NFI = .98$ ), Relative Fit Index ( $RFI = .98$ ), and

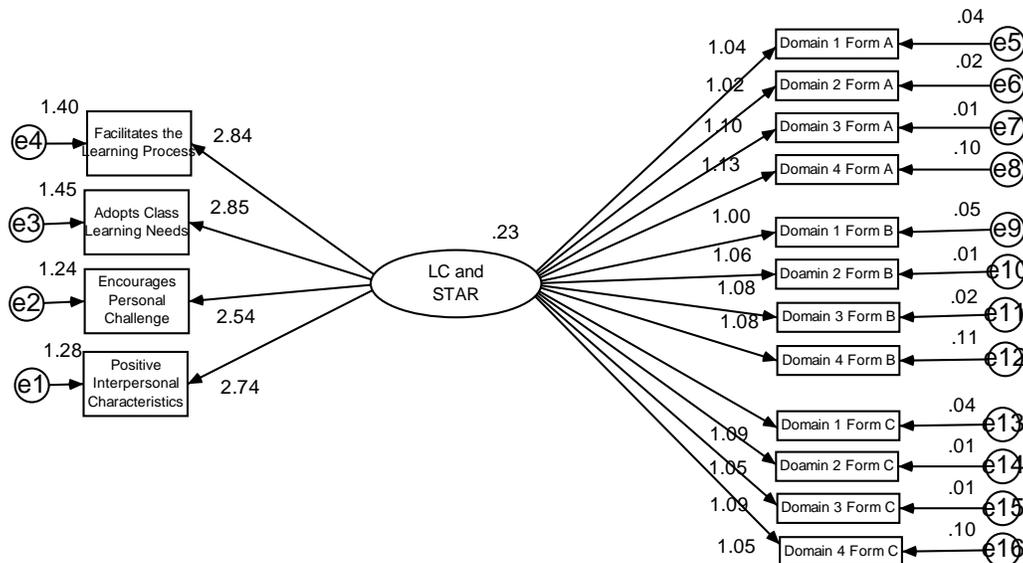
Table 2  
 Correlation Matrix of the Scales

	Form A				Form B				Form C				Learner-centeredness			
	D1	D2	D3	D4	D1	D2	D3	D4	D1	D2	D3	D4	PIC	EPC	ACLN	FLP
Form A																
D1	---															
D2	.41*	---														
D3	.43*	.70*	---													
D4	.24*	.35*	.38*	---												
Form B																
D1	.21*	.29*	.32*	.17*	---											
D2	.38*	.56*	.61*	.33*	.32*	---										
D3	.44*	.65*	.69*	.37*	.32*	.58*	---									
D4	.19*	.28*	.29*	.16*	.13*	.25*	.28*	---								
Form C																
D1	.33*	.46*	.48*	.29*	.35*	.43*	.49*	.20*	---							
D2	.42*	.64*	.64*	.36*	.30*	.56*	.63*	.28*	.47*	---						
D3	.43*	.63*	.71*	.38*	.31*	.59*	.65*	.29*	.48*	.63*	---					
D4	.23*	.34*	.36*	.20*	.16*	.31*	.35*	.16*	.27*	.33*	.34*	---				
Learner-centeredness																
PIC	.39*	.55*	.60*	.35*	.30*	.52*	.60*	.27*	.45*	.56*	.60*	.31*	---			
EPC	.39*	.53*	.59*	.34*	.30*	.52*	.58*	.26*	.44*	.54*	.58*	.31*	.86*	---		
ACLN	.39*	.53*	.59*	.35*	.30*	.54*	.60*	.26*	.45*	.57*	.60*	.30*	.85*	.86*	---	
FLP	.40*	.55*	.60*	.35*	.29*	.54*	.60*	.27*	.44*	.57*	.60*	.33*	.85*	.84*	.89*	---

Note. D1=Planning and preparation, D2=Classroom environment, D3=Instruction, D4=Professional Responsibility. PIC= Positive Interpersonal Characteristics, EPC=Encourages Personal Challenge, ACLN=Adopts Class Learning Needs, FLP=Facilitates the Learning Process.

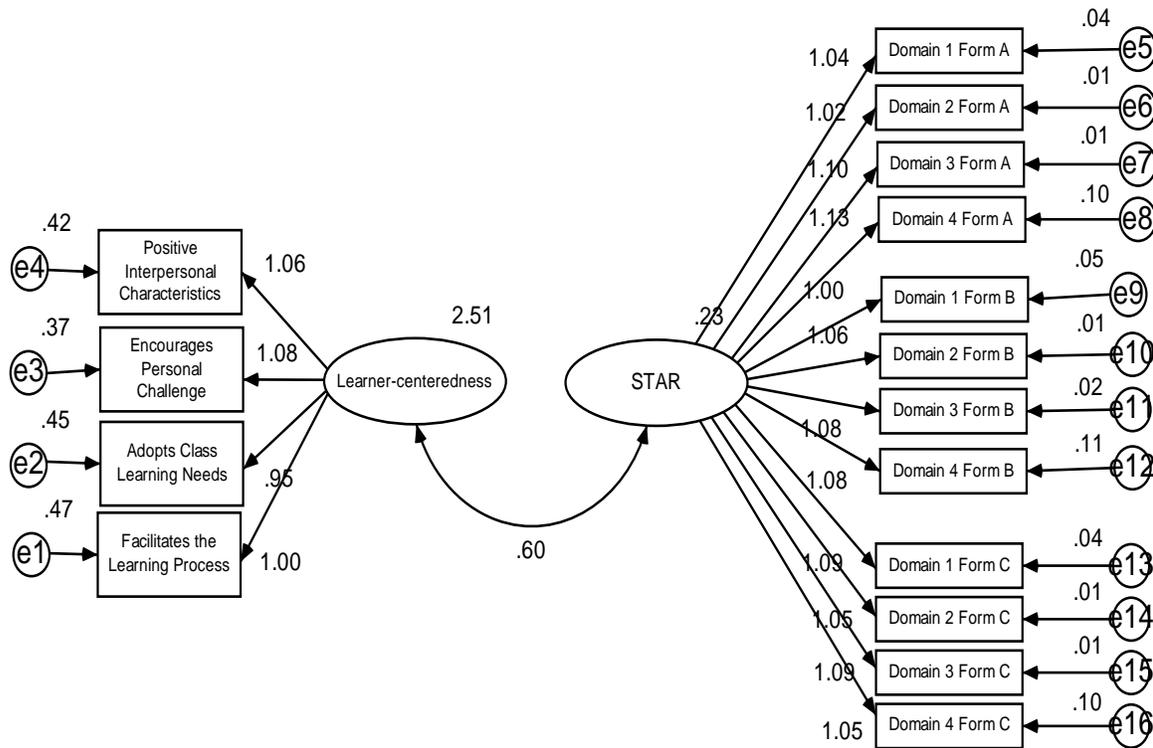
\* $p < .05$

Figure 1  
 One-Factor Measurement Model



Note. All parameter estimates are significant at .001. Domain 1=Planning and preparation, Domain 2=Classroom environment, Domain 3=Instruction, Domain 4=Professional Responsibility

Figure 2  
Two-Factor Measurement Model



Comparative Fit Index ( $CFI=.98$ ) show estimates with adequate goodness of fit.

The goodness of fit of the three measurement models are compared to determine the best model that can explain the relationship between learner-centeredness and the teacher performance assessment (see Table 3).

The best fitting model, as indicated consistently by the measures of goodness of fit, is the four-factor model where the three forms of the STAR are in separate latent constructs related with the LCPQ as another construct. This is indicated by obtaining the lowest chi-square, discrepancy function ( $\chi^2/df$ ), and RMSEA values and the highest  $GFI$  and  $TLI$  values. The difference from a one-factor model to a two factor model is very discrepant, indicated by a difference of  $\Delta\chi^2=4761.98$ . The two-factor model and the four-factor model are not so discrepant ( $\Delta\chi^2=79.4$ ) because the difference is only the structure of the STAR, where it is one latent construct in the two-factor model and three latent constructs in the four-factor model.

To determine which form of STAR best fits with the LCPQ, three common factor models were constructed where each form of the STAR is related with the LCPQ (see Table 4).

Comparing the single sample and comparative fit indices, when each form of the STAR was related with the LCPQ, showed that the Form A of the STAR when related to the LCPQ had the best fit. The other forms when related with the LCPQ also indicated an adequate fit; form B with LCPQ had the lowest value in the comparative fit indices.

To determine if the domains of Danielson's Components of Professional Practice are reflective of learner-centeredness, their covariances were determined (see Figure 4).

All of the domains of the Danielson's Components of Professional Practice as latent constructs are significantly related to learner-centeredness,  $p<.001$ . This means that Danielson's framework is indeed reflective of learner-centeredness. All its subscales also significantly load to their respective factors,  $p<.001$ . For this model, the minimum chi-square value is  $\chi^2=457.07$ ,  $df=94$ , and its discrepancy function is 4.95 which is an adequate fit. The Root Mean Square ( $RMR=.01$ ,  $RMSEA=.04$ ), and  $GFI=.97$  and  $AGFI=.96$  indicate that the model shows a very good fit. In the same way, the results in using Bentler-Bonnet's Normed Fit Index ( $NFI=.99$ ), Relative Fit Index ( $RFI=.99$ ), Incremental Fit Index ( $IFI=.99$ ), and Comparative Fit Index ( $CFI=.99$ ) show that estimates have also a very good fit.

Figure 3  
Four-Factor Measurement Model

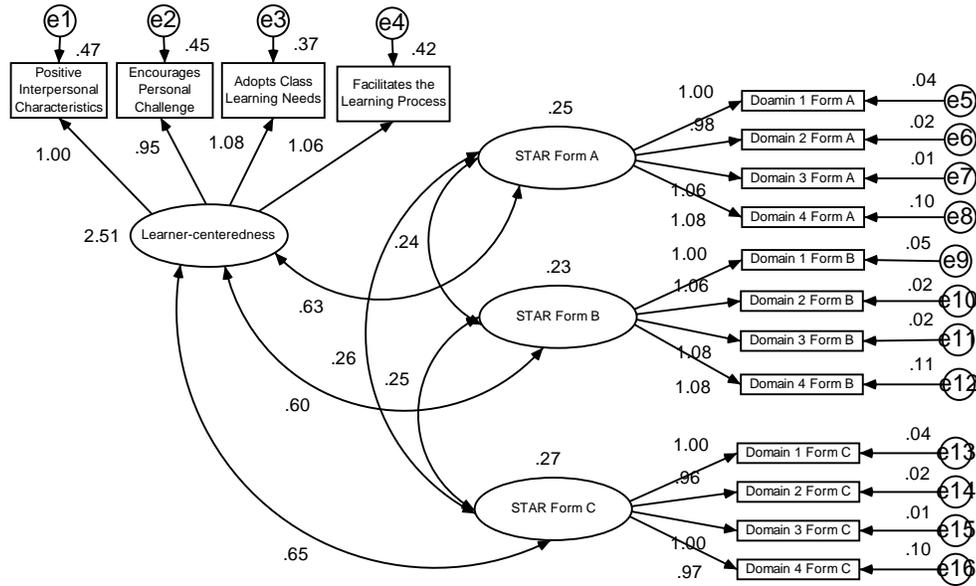


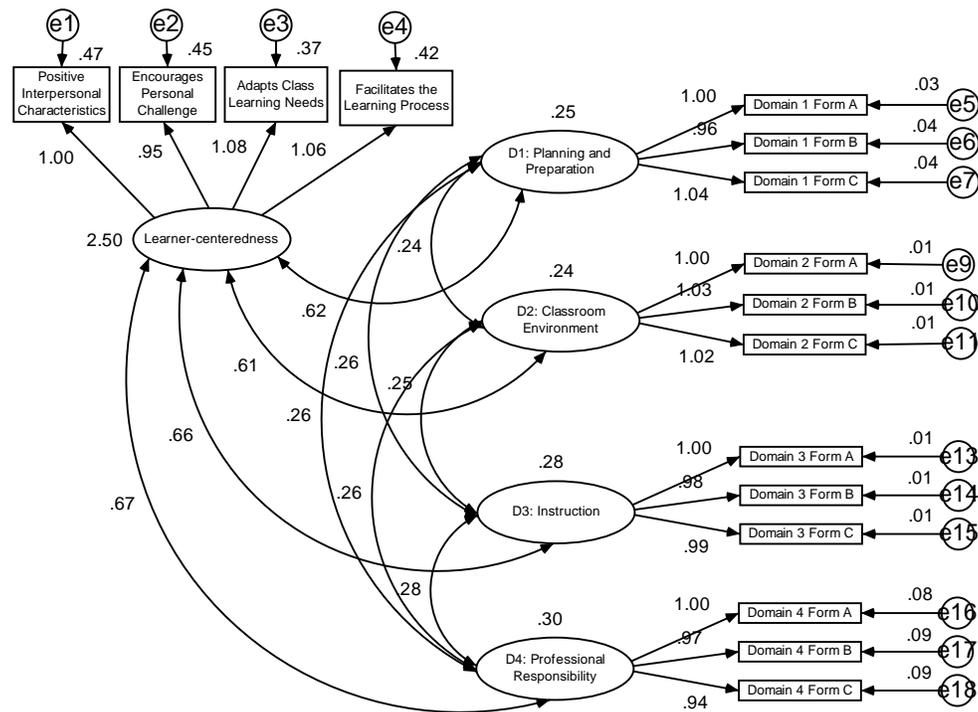
Table 3  
Goodness of Fit of the Three Measurement Models

Model	$\chi^2$	df	$\chi^2/df$	GFI	TLI	RMSEA	$\Delta\chi^2$
One-Factor Model	5857.45	104	56.32	.70	.89	.16	
Two-Factor Model	1095.47	103	10.64	.93	.98	.07	4761.98 <sup>1</sup>
Four-Factor model	1016.07	98	10.37	.94	.98	.06	79.4 <sup>2</sup>

Table 4  
Single Sample Fit Indices

	Form A	Form B	Form C
Joreskog GFI	0.98	0.97	0.98
Joreskog AGFI	0.97	0.96	0.98
Akaike Information Criterion	0.19	0.40	0.21
Schwarz's Bayesian Criterion	0.29	0.54	0.34
Browne-Cudeck Cross Validation Index	0.19	0.40	0.21
Independence Model Chi-Square	21322.01	16029.47	18779.32
Independence Model df	120.00	190.00	190.00
Bentler-Bonett Normed Fit Index	0.99	0.96	0.98
Bentler-Bonett Non-Normed Fit Index	0.99	0.96	0.99
Bentler Comparative Fit Index	0.99	0.97	0.99
James-Mulaik-Brett Parsimonious Fit Index	0.81	0.80	0.83
Bollen's Rho	0.98	0.95	0.98
Bollen's Delta	0.99	0.97	0.99

Figure 4  
Relationship of Learner Centeredness on Danielson’s Components of Professional Practice



**Discussion**

The study tested whether learner-centeredness can be reflected in the three parallel teaching assessment forms (the STAR). This was supported in the study where all forms were significantly related with learner-centeredness. When related to learner-centeredness all forms have adequate fit, but the model where Form A was related with LCPQ had the best fit. Since all factors are related with each other as a result of the intercorrelations (see Table 2), it is necessary to test the factors when they are combined and deconstructed to determine if the specific components are the same in showing signs of multicollinearity. With this procedure, the model where STAR was decomposed into three respective forms shows to have the best fit. This model indicates that separate forms correlate better with Learner-centeredness than one construct. However, statistical support was obtained indicating that the three forms are just measuring the same construct and are parallel to each other (as indicated by significant relationships). This suggests that each form has the same covariance with learner-centeredness, but each has a unique relationship with learner-centeredness to a certain extent. For instance, Form C had the highest covariance with learner-centeredness, indicating that when these scales are centered around the mean, it has the highest relationship, although the covariances of the other forms are not that far from each other.

The structure of learner-centeredness with the components of professional practice is not multicollinear as indicated in the one-factor model. Even though the factors of the LCPQ and the STAR loaded significantly to one factor, the fit indices are not consistently acceptable. This means that learner-centeredness and the components of professional practice are not within a single construct. Although they are best fitted in separate constructs, it can be explained that the components are reflective of learner-centeredness because the three forms have the same relationship with learner-centeredness as indicated by the significant values of the parameter estimates, which are also not discrepant from each other. This provides evidence that the items of the STAR correspond with the increased use of the learner-centeredness approach. In comparing the three models, the best fitting model is the three forms as separate latent constructs as they relate to learner-centeredness (four-factor model). The STAR as it relates to learner-centeredness is best explained having three separate forms rather than putting the domains together. The application of this result means that the separate forms of the STAR can be used interchangeably across different time frames since they have similar relationship with LCPQ. This also indicates that the STAR is better used with all complete domains rather than using the instruments with each domain separately.

It was further supported that the components of professional practice are indeed reflective of learner-centeredness because each domain was significantly related to learner-centeredness with an adequate fit (four-factor model). This result accounts for the unique variance of each domain of the professional practice on learner-centeredness. This means that each domain of the STAR explains learner-centeredness in a different way. Each domain of the STAR was significantly related to the other with a positive magnitude. So, an increase in one teaching professional practice also increases other domains. The components on instruction and professional responsibility have the highest relationship with learner-centeredness. The principles of learner-centeredness can be applied in all areas of the teaching and the learning processes, but it is most reflected through instruction and professional responsibility. By looking into the four dimensions of the measure of learner-centeredness, positive interpersonal characteristics and encouraging personal challenge is mostly manifested through the teacher's professional responsibility such as the teacher being a good model and showing professionalism. The other two domains of the LCPQ, which is "adapting class learning needs" and "facilitating the learning process," are mostly built into the instructional process. Examples of these instructional processes include the teacher adjusting his/her speed of teaching a lesson to match a student's learning capabilities and facilitating the lesson by asking questions for students to think critically.

The model can be used as an ideal framework for assessing teacher performance since it includes not only the behavior of teachers in teaching, but it also includes much of the learning process that takes place among learners. The models tested address the issues in a traditional paradigm in the assessment of teacher performance. Instead of focusing on a set of behaviors exemplified by teachers, assessment should also be focused on how teaching is translated into student learning. A strong link between the teaching process and its reflection on student learning is evident in the models showing that teaching domains are translated into the learner-centered principles. Aspects of student learning as indicators of teaching performance pose a challenge for many practitioners that specialize in teacher performance assessment. Our study implies how the teaching process feeds back and translates into the learning that takes place. Having a fused model where both teaching and learning are incorporated would show if teaching is effectively translated into student learning.

A theoretical implication of relating the components of professional practice with the four domains of LCPQ made the learner-centered approach more meaningful, especially in the actual teaching and learning process. The learner-centered practices provide

a detailed approach about the principles of the teaching and learning process, while the components of professional practice provide a detailed operation on how the teaching and learning process is carried out. Putting them together in a model provides an improved framework in providing a better guideline on how the teaching is conducted inside the classroom.

The learner-centered practices may be sufficient as a set of principles that guide the approach on how teaching and learning occurs when it is related to specific teaching components such as Danielson's framework. The specific framework shows an integration of learning principles and teaching components. The matching of teaching and learning in a framework would allow other researchers to fully investigate their relationship. It is common to attribute students' learning to the quality of the teacher's instruction, but it is difficult to design studies to test this notion. The specificity of this model uncovers unique contributions of teaching domains to students' learning. Teaching domains may have the same effects on learning, but stronger variance is explained for learner-centeredness with instruction and professional responsibility. The compatibility of learner-centeredness with these two domains highlights pedagogical (instruction) and personal (professional responsibility) aspects of the teacher into the learner-centeredness principles. This facilitates a balanced way of looking at the teaching and learning process because students do not only give importance to teaching but also consider their relationship with the teacher.

The models tested in the present study are further described as an amalgamation of learner-centered principles and teaching domains. This amalgamation is a combination of aspects of the teaching and learning process. More so, this amalgamation is representative in the assessment of the teaching and learning process in higher education.

The major idea espoused in the model is the reflection of teachers centering their teaching approaches more on student learning. Given this idea, student learning can be a good indicator of effective teaching. In the aspect of assessment, student learning indices should be included to assess teacher performance. The amalgamation provides a perspective for assessing further the relationship between the teaching and learning process.

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