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ABSTRACT

The Learner-Centered Psychological Principles (LCP) were developed through the efforts of an American Psychological Association task force as part of an effort to add to educational reform literature regarding the learner and the learner process. The Learner-Centered Battery (LCB) was administered to 38 teachers and 656 students in grades 6 through 12 in a rural school district. The purpose was to evaluate the self-assessment measures in the Learner-Centered Battery with experienced teachers, to determine the usefulness of the LCB for professional development programs, and to determine the relationships of student responses on the LCB to student achievement and teaching practices. In addition, Teacher Survey #2 of the Learner-Centered Battery was used by 55 pre-services teachers to observe current teaching practices. It was found that: (1) "Self Efficacy Ratings" predicted student achievement, (2) the Learner-Centered Battery can be used to predict high quality teaching, and (3) Teacher Survey #2 could be used to reliably observe current teaching practices according to the Learner-Centered Principles. An appendix includes a description of the learner centered psychological principles and several tables of data. (JBJ)

Running head: LEARNER-CENTERED PRINCIPLES

Use of Learner-Centered Principles Test Battery in Pre-service Educational Programs and in the School Setting: Implications for Teacher Roles and Professional Development Experiences

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Abstract

The Learner-Centered Battery was administered to 38 teachers and 656 students in grades 6 through 12 in a rural school district. In addition, Teacher Survey #2 of the Learner-Centered Battery was used by 55 pre-service teachers to observe current teaching practices. It was found that: (1) "Self Efficacy Ratings" predicted student achievement, (2) the Learner-Centered Battery can be used to predict high quality teaching, and (3) Teacher Survey #2 could be used to reliably observe current teaching practices according to the Learner-Centered Principles.

Use of Learner-Centered Principles Test Battery in Pre-service Educational Programs and in the School Setting: Implications for Teacher Roles and Professional Development Experiences

The Learner-Centered Psychological Principles (LCP) were developed through the efforts of an American Psychological Association task force as part of an effort to add to educational reform literature regarding the learner and the learning process (APA, 1992). These principles are applicable to effective schooling practices, positive mental health of students, and more effective functioning of teachers. The LCPs emphasize that "learner centeredness" involves taking the learner's frame of reference into account when developing educational experiences (McCombs, 1994). Woolfolk (1995) interprets the LCPs as an attempt to make sure that students are active learners using a variety of learning strategies in solving problems and discovering important ideas. (See Table 1 for an outline of the LCPs as they appeared in Woolfolk, 1995.)

Alexander and Murphy (1994, pp. 5-20) refra- ed the LCPs into 5 dimensions:

1. The knowledge base: One's existing knowledge serves as the foundation of all future learning by guiding organization and representations, by serving as a basis of association with new information, and by coloring and filtering all new experiences.

2. Strategic processing or executive control: The ability to reflect upon and

regulate one's thoughts and behaviors is essential to learning and development.

3. Motivation and affect: Motivational or affective factors, such as intrinsic motivation, attributions for learning, and personal goals, along with the motivational characteristics of learning tasks, play a significant role in the learning process.

4. Development and individual differences: Learning, while ultimately a unique adventure for all, progresses through various common stages of development influenced by both inherited and experiential/environmental factors.

5. Situation or context: Learning is as much a socially-shared undertaking, as it is an individually-constructed enterprise.

These principles fit well with the current Kentucky Education Reform Act of 1990 (KERA) which emphasizes that all students can learn, and at relatively high levels (Miller, Noland & Schaaf, 1990). KERA is a multifaceted reform with provisions for changes in curricula, teaching practices, and school management. The goal of this reform is to create an environment for improved student achievement resulting in greater school success. However, many changes are being implemented in Kentucky that do not have a firm foundation in learning theory and research within the field of educational psychology.

The purpose of this study was to (1) determine the suitability and reliability of using Teacher Survey #2 for pre-service teachers' observations of teaching practices, (2) evaluate the self-assessment measures in the Learner-Centered Battery (LCB) with

experienced teachers, (3) determine the usefulness of the LCB for professional development programs, and (4) determine the relationship of student responses on the LCB to student achievement and teaching practices. If found to be a useful measure of a "learner-centered" approach, these instruments should be incorporated in pre-service and professional development training for experienced teachers as state departments of education and school districts initiate educational reform.

Method

Participants

In Phase I of the study, 55 pre-service teachers in two undergraduate educational psychology courses in a southeastern university utilized Teacher Survey #2 for completion of required teacher observation hours. In Phase II of this study, 38 sixth through twelfth grade teachers and 656 of their students from a rural eastern Kentucky school system were selected based on criteria listed below. The criteria evaluated strong and weak teachers.

In phase II of the study, an administrative team met and compiled two lists of teachers from a small rural eastern Kentucky middle and high school. The teachers were designated as meeting or not meeting the following criteria: (a) the teacher encourages the students to use higher order thinking skills, (b) the course content is meaningful in today's world, (c) the learning activities are integrated into multiple content areas, (d) the teacher develops learning opportunities to encourage intrinsic motivation in students, (e) the teacher is positive in student-teacher relationships and cares about student success, (f) the teacher encourages tolerance for cultural diversity,

and (g) the teacher allows for and addresses individual differences in learning. In total, a group of 26 high school and 12 middle school teachers was identified. Of that group, 17 high school and 6 middle school teachers were suggested by the administrative team as closely meeting the criteria. Nine high school and 6 middle school teachers were suggested as not meeting the outlined criteria. All teachers were asked to participate in a study rating themselves (Teacher Survey #1) and having one of their classes (Student Survey) rate them on the learner-centered principles. All teachers agreed to participate in the study.

Each participating teacher selected one class of students to complete the Student Survey. In all, 656 students completed the survey with 359 reporting themselves to be female, 264 male, and 33 not reporting. Students reported themselves as enrolled in sixth or seventh grade (176), eighth grade (70), ninth grade (98), tenth or eleventh grade (187), or twelfth grade (113). Twelve students did not report a grade level. The data on race were suspect with 82.2% reporting themselves as white, 2.1% Asian, 2.1% Black, 2.4% Hispanic and 9.3% as other. This does not closely represent the distribution of race within the school system, which is predominantly white. It appears to be an over-estimation of "other" and an under-estimation of "white".

Design and Procedure

In Phase I of the study, students from two undergraduate educational psychology classes were given two copies of Teacher Survey #2 to use for two of their required observations of practicing teachers. These surveys were returned to the

instructor before the end of the semester.

In Phase II, the identified public school teachers were given an individual explanation and instructions and asked to return the teacher and student surveys to the District Curriculum Coordinator within one week. Teachers were asked to administer the student survey to their homeroom class or a class of their choice. Teachers were also asked to record the most recent report card grade for each student filling out a survey.

Many surveys had missing or incomplete data when they were returned. Teachers with missing grades were asked to complete the grade reports. After all surveys were returned, report card letter grades were converted to numerical scores using the following scale:

A+ = 99	A = 95	A- = 90
B+ = 89	B = 85	B- = 80
C+ = 79	C = 75	C- = 70
D+ = 69	D = 65	D- = 60
S+ = 85	S = 80	S- = 75
I or F = 59		

Results

For Phase I, a repeated measures ANOVA indicated that there were no significant differences between the pre- and posttest observations on Teacher Survey #2. The pre- and posttest means and standard deviations for Teacher Survey #2's four factors are shown in Table 2. These results indicate that the ratings were stable

for both of the students' observations.

For Phase II, an ANOVA of Teacher Survey #1 and the Student Survey indicated that "Self-efficacy ratings" significantly predicted student achievement, $F(1, 309) = 26.397$, $p < .05$. Table 3 illustrates that although the interaction between ethnicity and gender was not significant, the gender variable showed a trend toward significance, $F(1, 309) = 3.059$, $p = .08$. Factor 4, "Adapts to Individual Developmental Differences" also showed a trend toward significance, $F(1, 309) = 2.909$, $p = .089$.

Means and standard deviations for the four teacher practices factors are shown in Table 4. These scores, compared to the validation sample, indicate that the present sample was similar to the validation sample. That is, the teachers in the study exhibited high levels of learner-centered practices on Factors 1 through 3, but not on Factor 4.

Results of categorizing strong and weak teachers indicate that Teacher Practice Factor 2, "Honors student voice, provides challenge and encourages perspective taking", "State epistemic curiosity", and "Task mastery goals" were significant positive predictors of teacher quality. On the other hand, "Effort avoidance strategies", "Performance oriented goals", and "Work avoidant goals" were significant negative predictors of teacher quality, as seen in Table 4.

Discussion

The data provided by this study indicate that (1) Learner-Centered teaching practices can be observed reliably; (2) teachers demonstrate the three Learner-

Centered practices of "Creates positive interpersonal relationships/climate" (Factor 1), "Honors student voice, provides challenge, and encourages perspective taking" (Factor 2), and "Encourages higher order thinking and self-regulation" (Factor 3); (3) students' self-efficacy ratings are significant predictors of academic performance; and (4) the quality of teachers can be predicted with the LCB.

Since Learner-Centered teaching practices can be observed reliably, perhaps Teacher Survey #2 can be used in undergraduate pre-service educational psychology classes when students, as in this case, are required to observe current teaching practices in the public schools. However, academicians should ensure that these principles and practices are included in their coursework. In addition, educational psychology texts should include the LCPs in their content.

These results also suggest that teachers have more difficulty with Factor 4, "Adapts to individual developmental differences." Interestingly, the present data support the national validation sample, suggesting that this is a difficult task for teachers nationwide. Thus, this issue could and should be addressed in professional development programs, as well as in pre-service courses.

In addition, since students' self-efficacy ratings appear to be a significant predictor of academic achievement, teachers need to consider this issue when planning their instruction and evaluation. In fact, this is one of the goals of KERA. That is, by increasing students' self-concept it is speculated that their academic performance would increase. Thus, it would appear that this issue should also be addressed in pre-service courses and professional development programs.

Several factors are predictive of the quality of teachers as rated by the LCPs. That is, "Honors student voice, provides challenge and encourages perspective taking", "State epistemic curiosity", and "Task mastery goals" are predictive of "good" teachers. In addition, the "Effort avoidance strategies", "Performance oriented goals", and "Work avoidant goals" factors are predictive of "weak" teachers. All of these factors are in the expected direction except "Performance oriented goals." This is especially important because KERA initiatives emphasize performance-based assessment. Perhaps this result is a backlash for students' feelings of frustration with the amount of performance assessment mandated by KERA. If this is so, then this issue needs to be addressed in professional development programs.

In conclusion, there are several factors within the LCPs that can predict educational performance, and can predict teacher quality. Thus, these LCPs can and probably should be incorporated into our public schools, as well as pre-service and inservice teacher education programs.

Authors' Notes

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Table 1

Learner-Centered Principles

Principle 1	The nature of the learning process	Learning is a natural process of pursuing personally meaningful goals. It is active, volitional, and internally motivated; it is a process of discovering and constructing meaning from information and experience, filtered through the learner's unique perception, thoughts, and feelings.
Principle 2	Goals of the learning process	The learner seeks to create meaningful, coherent representations of knowledge regardless of the quantity and quality of the data available.
Principle 3	The construction of knowledge	The learner links new information with existing and future-oriented knowledge in uniquely meaningful ways.
Principle 4	Higher-order thinking	Higher-order strategies for "thinking about thinking"- for overseeing and monitoring mental operations- facilitate creative and critical thinking and the development of expertise.
Principle 5	Motivational influences on learning	The depth and breadth of information processed, and what and how much is learned and remembered, are influenced by (a) self-awareness and beliefs about personal control, competence, and ability; (b) clarity and saliency of personal values, interests, and goals; (c) personal expectations for success and failure; (d) affect, emotion, and general states of mind; and (e) the resulting motivation to learn.
Principle 6	Intrinsic motivation to learn	Individuals are naturally curious and enjoy learning, but intense negative cognitions and emotions thwart this enthusiasm.

Principle 7	Characteristics of motivation-enhancing learning tasks	Curiosity, creativity, and higher-order thinking are stimulated by relevant, authentic learning tasks of optimal difficulty and novelty for each student.
Principle 8	Developmental constraints and opportunities	Individuals progress through stages of physical, intellectual, emotional, and social development are a function of unique genetic and environmental factors.
Principle 9	Social and cultural diversity	Learning is facilitated by social interactions and communication with others in flexible, diverse, and adaptive instructional settings.
Principle 10	Social acceptance, self-esteem, and learning	Learning and self-esteem are heightened when individuals are in respected and caring relationships with others who see their potential, appreciate their unique talents, and accept them as individuals.
Principle 11	Individual differences in learning	Learners have different capabilities and preferences for learning modes and strategies.
Principle 12	Cognitive filters	Personal beliefs, thoughts, and understandings resulting from prior learning and interpretations become the individual's basis for constructing reality and interpreting life experiences.

Note. Adapted from A. E. Woolfolk (1995) Educational Psychology (6th ed.).

Needham Heights, MA: Allyn & Bacon.

Table 2

Descriptive Statistics of Teacher Survey 2

Factors	Pre-test		Post-test	
	M	SD	M	SD
Practice 1	3.24	.62	3.23	.67
Practice 2	3.02	.66	3.09	.57
Practice 3	2.91	.63	2.90	.66
Practice 4	2.57	.63	2.58	.68

Note: n=55

Table 3

Analysis of Variance of Student Achievement

SOURCE	SUM-OF -SQUARES	DF	MEAN-SQUARE	F-RATIO	P
ETHNUMB	50.376	1	50.376	0.524	0.470
GENDER	294.033	1	294.033	3.059	0.081
ETHNUMB*					
GENDER	103.867	1	103.867	1.080	0.299
POSREL 1	62.148	1	62.148	0.646	0.422
STUDVOI 2	58.595	1	58.595	0.610	0.436
HOTSELF 3	6.500	1	6.500	0.068	0.795
DEVDIFF 4	279.626	1	279.626	2.909	0.089
SER	2537.585	1	2537.585	26.397	0.000
ALS	19.630	1	19.630	0.204	0.652
EAS	60.737	1	60.737	0.632	0.427
POG	32.878	1	32.878	0.342	0.559
SEC	52.766	1	52.766	0.549	0.459
TMG	60.566	1	60.566	0.630	0.428
WAG	69.559	1	69.559	0.724	0.396
POSRELD	97.176	1	97.176	1.011	0.315
STUDVOID	10.803	1	10.803	0.112	0.738
HOTSELFFD	55.941	1	55.941	0.582	0.446
DEVDIFFD	106.704	1	106.704	1.110	0.293
ERROR	29704.126	309	96.130		

Note: N=328

Table 4

Descriptive Statistics of Teacher Practices b

Factors	M[a]	SD
Positive Relations	3.15	.77
Student Voice	3.14	.65
H Think-Self Reg.	3.02	.72
Dev. Differences	2.39	.75

Note: a. National Norms=Fac 1=3.54 Fac2= 3.26 Fac 3= 3.09 Fac 4=2.47

b. n=656

Table 5

Univariate F Tests For Strong VS. Weak Teachers

VARIABLE	SS	DF	MS	F	P
POSREL1	0.496	1	0.496	0.848	0.358
ERROR	240.161	410	0.586		
STUDVOI 2	2.134	1	2.134	5.357	0.021*
ERROR	163.340	410	0.398		
HOTSELF3	0.081	1	0.081	0.150	0.699
ERROR	220.966	410	0.539		
DEVDIFF4	0.047	1	0.047	0.082	0.774
ERROR	232.923	410	0.568		
SER	1.067	1	1.067	2.320	0.128
ERROR	188.491	410	0.460		
ALS	0.061	1	0.061	0.138	0.711
ERROR	180.944	410	0.441		
EAS	3.446	1	3.446	8.390	0.004*
ERROR	168.399	410	0.411		
POG	12.052	1	12.052	21.263	0.000*
ERROR	232.39	410	0.567		
SEC	3.173	1	3.173	7.505	0.006*
ERROR	173.369	410	0.423		
TMG	2.174	1	2.174	4.095	0.044*
ERROR	217.645	410	0.531		
WAG	5.776	1	5.776	10.754	0.001*
ERROR	220.226	410	0.537		
POSRELD	0.231	1	0.231	0.413	0.521
ERROR	228.920	410	0.558		
STUDVOID	3.804	1	3.804	8.413	0.004*
ERROR	185.395	410	0.452		

VARIABLE	SS	DF	MS	F	P
HOTSELFD	2.912	1	2.912	4.699	0.031
ERROR	254.111	410	0.620		
DEVDIFFD	17.066	1	17.066	28.258	0.000*
ERROR	247.617	410	0.604		