Measuring the Cognitive Domain of the Quality of Student Life: An Instrument for Faculties of Education

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This study presents an instrument for measuring the cognitive domain of the quality of student life in faculties of education, developed using a representative sample of undergraduate and graduate students at a major Canadian university. The findings suggest there are three dimensions of the cognitive domain of the quality of student life: Development of Pupils, Subject Expertise, and the Methodology of Teaching. Alpha reliability coefficients for these scales ranged from 0.72 to 0.75.

Cette étude présente un instrument servant à évaluer la facette cognitive de la qualité de la vie étudiante dans les facultés de sciences de l'éducation, instrument mis au point à l'aide d'un échantillon représentatif d'étudiants des premier, deuxième et troisième cycles dans une grande université canadienne. Les conclusions semblent indiquer que la facette cognitive de la qualité de la vie étudiante comprend trois dimensions: le développement des étudiants, la maîtrise du sujet d'étude et la méthodologie pédagogique. Les coefficients de fidélité alpha pour ces échelles variaient entre 0,72 et 0,75.

Teachers enjoy considerable status, ranking among the top fifty of the five hundred most prestigious occupations in Canada (Blishen, Carroll, & Moore, 1987; Blishen & McRoberts, 1976). Monitoring the socialization processes that occur in faculties of education is therefore important. Since the occupational attainment of young people is related to the amount and quality of schooling they receive (Goyder, 1990); and since students' educational attainment is influenced by the quality of their teachers (Austin & Garber, 1986); then the quality of teachers is affected by the recruitment and socialization practices of faculties of education.

Socializing effective student teachers requires the definition and refinement of conduct in accordance with diverse role expectations. This task is further complicated because professors in faculties of education want student teachers to do more than simply comply with new role expectations. Professors want student teachers to internalize the norms of good teaching and act congruently with these norms.

An essential condition for internalizing norms is that individuals feel they have a meaningful relationship with an organization, rather than being alienated from it (Roberts, 1990). Instruments designed to measure the quality of life provide one way for individuals to express their degree of integration with organizations. "Quality of life" refers to the degree of satisfaction or sense of well-being people experience in specific environments (Schuessler & Fisher, 1985). In general, the quality of life people experience in organizations increases as people believe their interests are aligned with the goals of the organization, and as they perceive that the organization is serving their needs and interests.

Quality of life has been studied in a variety of organizational contexts during the last thirty years (for example Larson, 1978; Palys & Little, 1980). After reviewing hundreds of recent studies, Michalos (1986) found, however, that 1% of them were conducted on educational organizations.

Fraser (1986) reviewed available research literature on the quality of life and concluded that although several studies have been conducted at the elementary and secondary school levels, "surprisingly little analogous work has been conducted at the higher education level" (p. 29). Specifically, no studies have investigated quality of life of students in faculties of education. Given the earlier argument connecting the quality of life of student teachers to their socialization as effective teachers, this dearth of research represents a significant deficiency. In response, we here report the development of an instrument for measuring the cognitive domain of the quality of life of student teachers.

A THEORETICAL FRAMEWORK

The theoretical framework for our instrument emphasizes the role of education faculties in socializing student teachers. Two aspects of socialization account for the way individuals affiliate with organizations and are in turn influenced by them: directiveness and warmth (Brim, 1966; Coser, 1979; Roberts, 1990). Not surprisingly, these two aspects are similar to the characteristics of effective teaching (Austin, 1987; Kleinfeld, 1975; Purkey & Smith, 1987). Successful teaching and successful socialization require clearly stated demands for change and sustained social support for change. Kleinfeld (1975) calls socialization agents with these characteristics "warm demanders." Teachers with these attributes demand meaningful, specific changes from their students while providing them with sufficient social support to preserve their personal integrity and dignity.

A full exposition of the theoretical framework supporting this conception is found in Roberts and Clifton (1991b). This theoretical framework suggests student teachers' internalization of appropriate norms will most likely occur in faculties of education that have challenging, relevant cognitive standards (the "demandingness" aspect) and are socially supportive (the "warmth" aspect). Accordingly, a conceptualization of the quality of student life in faculties of education should include cognitive and affective domains.

SAMPLE

The proposed indicators of this instrument for measuring quality of life were tested on a representative sample of undergraduate and graduate students in the faculty of education at a major Canadian university. The undergraduates were selected using a stratified random cluster procedure. This procedure involved identifying the mandatory courses in each year of the undergraduate programmes and selecting a random sample of classes from these programmes. The 20 classes selected for this sample enrolled 397 students. Data from 502 graduate students (also a random sample) were collected by a mail survey. In all, 526 questionnaires were completed, for a response rate of 59%, a response rate adequate for our purpose.

CONCEPTUALIZATION

This exploratory study of the quality of student life in the cognitive domain required a conceptual foundation from which an initial set of indicators could be developed. Since faculties of education challenge student teachers to assimilate a variety of information, knowledge, attitudes, and skills, we conceptualized the cognitive domain in terms of Bloom's taxonomy (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956). The dimensions of this taxonomy are well known and can be translated into indicators that student teachers understand (Lein, 1976). Briefly, the six dimensions of the cognitive domain are: (1) knowledge, which refers to student teachers' ability to recognize and recall basic information; (2) comprehension, which involves student teachers accurately translating and interpretating information; (3) application, which requires student teachers to transfer abstract concepts and principles into appropriate teaching behaviours; (4) analysis, which requires student teachers to decompose arguments into their constituent components and identify the relationships among the parts; (5) synthesis, which involves student teachers' ability to put facts, concepts, and principles together in the form of new practices, perspectives, and interpretations; and (6) evaluation, which refers to student teachers' ability to judge material's intellectual and practical value.

Using this conceptualization as a first approximation of the cognitive domain, the succeeding tasks in instrument construction include translating these dimensions into meaningful items, using empirical evidence to revise the conceptualization, and establishing the validity and reliability of the scales.

CONTENT VALIDITY

A panel of judges representing undergraduate students, graduate students, and faculty members assessed the content validity of our items. After several revisions, the judges agreed upon a set of items for each dimension that had both face validity and sampling validity.

This assessment of content validity established that these items would measure each of the six dimensions of the cognitive domain of the quality of life of student teachers. The next step in scale construction was to test the empirical validity of the six dimensions.

CONSTRUCT VALIDITY

Construct validity indicates the degree to which items reflect a single concept and have consistent relationships with theoretically important exogenous variables (Carmines & Zeller, 1979, pp. 22–26). Despite the appeal of construct validity and the sophistication of Piazza's (1980) procedures, many survey research instruments are not subjected to these types of rigorous requirements (see Stinchcombe & Wendt, 1975, p. 59). Thus, applying these procedures to assess the cognitive domain of the quality of life of student teachers represents a substantial improvement over many other instruments used in educational and social scientific research.

Factor Analyses

Piazza's procedures use a series of analyses involving progressively more rigorous requirements. The first analysis involves a confirmatory factor analysis of the items. Factor analysis examines patterns of covariation among items to determine if these patterns are congruent with the theoretically specified constructs (Harman, 1967; Kim & Mueller, 1978a, 1978b; Stinchcombe, 1971). In other words, to be consistent with the theoretical conceptualization, the items selected as measures of the six dimensions should load on six different factors. To test this proposal we used principal components analysis to extract six factors from the correlation matrix of twenty-five items, and then rotated the factors to the Varimax criterion.

Table 1 reports both the items selected to measure each dimension of the cognitive domain and the results of the factor analysis. On the questionnaire, all items included in this table were prefaced by the phrase, "In the Faculty of Education I have learned . . ." (e.g., ". . . a considerable amount about the subject matter I plan to teach").

This table reports only those coefficients that are at least 0.30. On balance, these results are disappointing because they do not fit the pattern we predicted from theoretical arguments developed by Bloom (Bloom et al., 1956). One deficiency in these findings is that the factors include items from several different dimensions. For example, Factor 1 contains several items from each of the six dimensions. Another deficiency is that several items load on more than one factor. For example, Item 2 loads on Factors 1, 2, and 6. Taken together, these results fail to confirm the six dimensions of the cognitive domain of the quality of life of student teachers. Similar results were obtained when we used oblique methods of rotating the six factors.

TABLE 1

Pattern Matrix of the Items after Varimax Rotation

Items	F_1	F_2	F_3	F_4	F_5	F_6
Knowledge						
1. A considerable amount about the subject I plan to teach.		.72				
2. A considerable amount about the methodology of teaching.	.40	.41				–.36
3. The professional responsibilities of teachers.			.79			
4. A considerable amount about the psychological development of children.				.80		
5. A considerable amount about the social-emotional development of children.				.86		
Comprehension						
6. To communicate clearly the subject matter I plan to teach.		.71				
7. To write in a precise manner.		.40	.34			.46
8. To plan appropriate learning activities.	.63	.38				
9. To speak in a clear and concise manner.			.50			.39
Application						
10. To evaluate the social-emotional performance of students.		.32		.60		
11. To present lessons in a systematic manner.	.54	.38				
12. To evaluate the academic performance of students.	.65					
13. To use a variety of teaching strategies.	.79					
14. To use a variety of ways to maintain classroom discipline.	.49		.48	.31		
Analysis						
15. To analyze the theoretical perspectives of education.					.81	
16. To assess teaching as a profession.			.73			
17. To analyze teaching in terms of various models of teaching.	.50				.43	
Synthesis						
18. To synthesize various perspectives in the subjects I plan to teach.		.68			.32	
19. To combine elements of knowledge into new perspectives.		.43	.36		.33	.38
20. To combine various teaching techniques.	.75					
21. To combine information from a number of sources.	.30					.65
Evaluation						
22. To evaluate theoretical perspectives in education.					.80	
23. To evaluate the subject areas I plan to teach.		.60				.30
24. To examine my own teaching critically.	.57					.43
25. To evaluate theories of classroom management.	.43		.39	.31	.37	
Eigenvalues	8.3	1.9	1.7	1.4	1.2	1.0
Percentage of total variance	33.0	7.6	6.8	5.5	4.9	4.1
Percentage of common variance	53.3	12.3	11.0	8.9	7.9	6.6

In exploratory studies such results are not uncommon, since the initial theoretical framework is only a first approximation. To reconceptualize this domain in an empirically sustainable form, we used exploratory factor analysis. To search for common themes, the meaning of each item was carefully reviewed in light of the previous results of the factor analyses. Several ambiguous items were discarded and, after several more analyses, we were able to reorganize the items into three dimensions. These new dimensions of the cognitive domain were labelled Methodology of Teaching, Development of Pupils, and Subject Expertise. The plausibility of these reorganized dimensions was tested by a final factor analysis, as reported in Table 2.

TABLE 2

Pattern Matrices of the Items Before and After Oblique Rotation

		Unrotated			*Rotated*		
Items		F_1	F_2	F_3	F_1	F_2	F_3
Methodology of teaching							
1.	A considerable amount about the methodology of teaching.	.54			.50		
2.	To plan appropriate learning activities.	.70			.71		
3.	To present lessons in a systematic manner.	.61			.65		
4.	To evaluate the academic performance of students.	.61			.68		
5.	To use a variety of teaching strategies.	.68	–.47		.90		
6.	To combine various teaching techniques.	.67	–.35		.79		
7.	To examine my own teaching critically.	.67			.66		
Development of pupils							
8.	The professional responsibilities of teachers.	.49				.32	
9.	A considerable amount about the psychological development of children.	.49	.49	–.38		.80	
10.	A considerable amount about the social-emotional development of children.	.53	.58	–.44		.93	
11.	To evaluate the social-emotional performance of students.	.55	.45			.67	
Subject expertise							
12.	A considerable amount about the subject I plan to teach.	.53		.39			.68
13.	To write in a precise manner.	.49		.54			.82
14.	To synthesize various perspectives in the subject I plan to teach.	.62		.36			.68
15.	To combine elements of knowledge into new perspectives.	.63		.38			.70
16.	To combine information from a number of sources.	.58		.38			.61
	Eigenvalues	5.6	1.6	1.4			
	Percentage of total variance	35.1	9.7	8.7			
	Percentage of common variance	65.6	18.1	16.3			

These findings confirm the appropriateness of reconceptualizing the cognitive domain in three dimensions. In the rotated solution, each item loads on a single factor, the factor loadings are relatively high, and each factor contains items from only one dimension. Where the original conceptualization of this domain emphasized the cognitive dimensions of learning in Bloom's taxonomy (Bloom et al., 1956), this reconceptualization emphasizes the content student teachers are concerned about. The Methodology of Teaching dimension (Factor 1) captures the instructional skills faculties of education require of student teachers; the Development of Pupils dimension (Factor 2) shows what student teachers have learned about the pupils they will teach; and the Subject Expertise dimension (Factor 3) indicates student teachers' knowledge of the subject matter they will teach.

TABLE 3

Correlations of the Items Measuring the Three Dimensions with Three Exogenous Variables

Item numbers	*GPA*	*Gender*	*Father's education*
Methodology of Teaching			
1.	–.01	–.04	–.05
2.	–.05	.06	–.03
3.	.06	.01	.04
4.	.01	–.01	–.05
5.	.02	.00	–.07
6.	–.02	.00	–.04
7.	.02	.02	–.04
Development of Pupils			
8.	–.17	.06	–.05
9.	–.08	.04	–.07
10.	–.14	–.01	–.04
11.	–.10	–.02	–.03
Subject Expertise			
12.	.04	.08	–.10
13.	.05	.01	–.10
14.	.11	.02	–.03
15.	–.04	–.02	–.07
16.	.03	.05	–.08

Piazza (1980) argues that the use of factor analysis in constructing scales often masks a difficulty. Although items may be indicators of a common dimension, their relationships to other theoretically relevant variables may bring a "hidden contaminant into the scale and distort the relationships of the scale to those other variables" (Piazza, 1980, p. 588). The strategy recommended to prevent such distortion is to select only items with a consistent relationship to exogenous variables. A set of items selected this way reduces the ambiguity of scales. Piazza's specific procedures for achieving this result require calculation of the proportionality of correlations and canonical correlations.

Proportionality of Correlations

The construct validity tests of items in each dimension used three exogenous variables: grade point average (GPA), gender, and father's occupation. Piazza (1980) recommends that the exogenous variables selected have low correlations with one another and plausible correlations with the scale items. A review of the sociology of education literature, and preliminary analysis of the data revealed that gender, GPA, and father's occupation were the only variables in our data set that met these criteria. Gender was measured on a 2-point scale (coded as 1 for males and 2 for females); GPA was measured on a 6-point scale ranging from GPAs of 2.0 (coded as 3) to GPAs between 4.0 and 4.5 (coded as 8); and father's education was measured on a 9-point scale that ranged from completed elementary school (coded as 1) to completed graduate school (coded as 9). The correlations between each item and these three exogenous variables are reported in Table 3.

The construct validity task is to search for consistent patterns of relationship between the sets of items and the three exogenous variables. However, when each dimension is measured by multiple indicators, it is often difficult to detect similarities and differences in the correlation profiles. To simplify this task, Piazza (1980, pp. 591–595) developed a statistical procedure summarized by the Index of Proportionality (P^2). The central argument for this procedure is that because "all the items need not measure the underlying construct with the same degree of efficiency, it is not necessary that each row of correlations be the same. One would expect, however, that the rows would be *proportional*" (Piazza, 1980, p. 592). In other words, items with high construct validity are those which have proportionally similar relationships with the exogenous variables. The P^2 statistic has a conventional interpretation: it equals +1 if the items have exactly proportional correlations with the exogenous variables; –1 if the correlations are proportional but in opposite direction; and zero if there are no consistent relationships (Piazza, 1980, p. 592).

The P^2 matrices of the items in all three quality of life dimensions are reported in Table 4. In the Methodology of Teaching dimension, items 2, 3,

and 7 generally have lower P^2s than the other items. For the Development of Pupils dimension, all items have quite high P^2s. Finally, for the Subject Expertise dimension, all items except item 15 have reasonably high P^2s. These findings suggest that some items, particularly in the Methodology of Teaching dimension, do not meet the criterion of proportionality. However, Piazza recommends that prior to making a final decision, these analyses be supplemented by analyses using canonical correlations.

TABLE 4

Matrices of P^2s for the Items Measuring the Three Dimensions

Methodology of Teaching						
Item number	*1.*	*2.*	*3.*	*4.*	*5.*	*6.*
1.						
2.	.01					
3.	.40	.35				
4.	.69	.01	.16			
5.	.49	.03	.09	.96		
6.	.58	.35	.74	.60	.54	
7.	.10	.12	.00	.62	.81	.30
Development of pupils						
Item number	*8.*	*9.*	*10.*			
8.						
9.	.84					
10.	.85	.67				
11.	.76	.59	.99			
Subject expertise						
Item number	*12.*	*13.*	*14.*	*15.*		
12.						
13.	.72					
14.	.34	.45				
15.	.12	.27	.08			
16.	.99	.81	.34	.17		

Canonical Correlations

Canonical correlation permits the computation of coefficients that express the maximized linear relationship between two sets of variables. The technique helps determine if a set of items measuring a dimension has only one systematic relationship to another set of variables; it is used to reduce the likelihood that ambiguous items will be included in the scale. Specifically, canonical correlation analyses generate a number of variates equal to the number of variables in the smallest set, with each successive variate being orthogonal to the previous one and explaining successively less of the variation between the two sets of variables. In other words, variables "are combined to produce, for each side, a predicted value that has the highest correlation with the predicted value on the other side" (Tabachnick & Fidell, 1989, p. 193). As in factor analysis, variables with coefficients of 0.30 and higher, explaining approximately 10% or more of the variance, are conventionally interpreted as part of the variate (Tabachnick & Fidell, 1989, p. 217).

The canonical correlations are shown in Table 5. This table reports only the first variate for items in each dimension because this variate contains all the relevant information. Since the three exogenous variables comprise the set with fewest items, the canonical analyses generated three canonical variates. These variates were computed for each dimension of the cognitive domain of the quality of student life to determine if the items in each dimension had a systematic relationship with the set of exogenous variables.

The first panel of Table 5 reports two analyses of the items designed to measure the Methodology of Teaching dimension. All seven items were included in the first analysis and resulted in a canonical correlation of 0.28, representing approximately 8% of the common variance. Clearly some items do not load on the variate at the conventional level of 0.30. When the P^2 statistics were considered alongside the loadings reported in this table, we decided to include only items 1, 4, 5, and 6 in a second analysis in order to obtain higher loadings and a stronger canonical correlation. The results for this revised scale appear in the second column and show a marked improvement. Specifically, the canonical correlation has increased from 0.28 to 0.59 and all items now have the same sign and are at least 0.30. In short, these results confirm that items 1, 4, 5, and 6 have good construct validity for measuring the Methodology of Teaching dimension.

The second panel of Table 5 shows the canonical correlation analysis for the four items measuring the Development of Pupils dimension. These items all load consistently above 0.30. The canonical correlation coefficient of 0.64 explains approximately 41% of the common variance. In short, these findings confirm those of the P^2 analysis and suggest that these items have good construct validity for measuring this dimension.

TABLE 5

Canonical Correlations Between the Items Measuring the Three Dimensions and the Three Exogenous Variables

	1st Analysis	*2nd Analysis*
Methodology of teaching item number		
1.	.23	–.89
2.	–.67	
3.	–.03	
4.	–.11	–.30
5.	.13	–.63
6.	–.09	–.33
7.	–.17	
Exogenous variables		
GPA	.58	–.08
Gender	–.77	.53
Father's education	–.15	.83
Canonical correlation (R)	.28	.59
Eigenvalue (R^2)	.08	.35
Redundancy	.00	.00
Development of pupils item number		
8.	–.89	
9.	–.42	
10.	–.66	
11.	–.46	
Exogenous variables		
GPA	.93	
Gender	–.13	
Father's education	.30	
Canonical correlation (R)	.64	
Eigenvalue (R^2)	.41	
Redundancy	.02	
Subject expertise item number		
12.	.74	–.97
13.	.34	–.50
14.	.58	–.52
15.	–.17	
16.	.30	–.48
Exogenous variables		
GPA	.66	–.24
Gender	.71	–.77
Father's education	–.35	.62
Canonical correlation (R)	.47	.65
Eigenvalue	.22	.42
Redundancy	.01	.01

Finally, the third panel of Table 5 reports two analyses of the five items measuring the Subject Expertise dimension. The first analysis indicates item 15 has a low loading and opposite sign to the other items, which is consistent with the results of the P^2 analysis. Consequently, item 15 was deleted and the remaining items were reanalyzed. Results, reported in the second column, show all remaining items have strong, consistent loadings on the variate. Moreover, the canonical correlation has increased from 0.47 to 0.65, explaining approximately 42% of the common variance. These findings support the conclusion that this set of items have considerable construct validity for measuring the Subject Expertise dimension.

RELIABILITY ASSESSMENT

So far, the content validity and construct validity procedures have resulted in the selection of 12 of the 25 items in the original instrument. The standards for construct validity are more rigorous than those for conventional techniques relying primarily on factor analyses. We are confident our instrument contains relatively little non-random error.

The quality of new scales is typically summarized by reporting reliability coefficients of the constituent items. Cronbach's alpha reliability coefficient is the most commonly reported reliability measure (Carmines & Zeller, 1979, p. 44). This statistic ranges from 0, indicating no internal consistency, to +1.0, indicating perfect internal consistency. The acceptability of particular reliability coefficients depends, of course, on the purposes of the study. For research purposes, Smith and Glass (1987, p. 106) claim moderate reliability coefficients, those over 0.50, are sufficient. Others recommend researchers "strive for indices with alphas of 0.70 or higher" (Bohrnstedt & Knoke, 1982, p. 361), while remembering that it is difficult to obtain reliability coefficients beyond 0.80 (Nunnally, 1989). This particularly true for alpha coefficients that are lower-bound estimates. The true reliabilities are likely to be higher than alpha coefficients indicate.

The three scales we developed to measure the cognitive domain of the quality of life of student teachers hold up well against these standards. The alpha reliability coefficient for Methodology of Teaching is 0.75, for Development of Pupils 0.73, and for Subject Expertise 0.72. All coefficients are above the levels recommended for research purposes. Taken together, the results of our analyses confirm that these quality of life scales have substantial construct validity and reliability. The final items selected for these scales, along with their reliabilities, are reported in Table 6. It is important to recall that each item is prefaced by the phrase, "In the Faculty of Education I have learned. . . ."

TABLE 6

Final Items Selected to Measure the Cognitive Domain

Methodology of teaching dimension
- — A considerable amount about the methodology of teaching.
- — To evaluate the academic performance of students.
- — To use a variety of teaching strategies.
- — To combine various teaching techniques.

Cronbach's alpha reliability = 0.75

Development of pupils dimension
- — The professional responsibilities of teachers.
- — A considerable amount about the psychological development of children.
- — A considerable amount about the socio-emotional development of children.
- — To evaluate the socio-emotional performance of students.

Cronbach's alpha reliability = 0.73

Subject expertise dimension
- — A considerable amount about the subject I plan to teach.
- — To write in a precise manner.
- — To synthesize various perspectives in the subject I plan to teach.
- — To combine information from a number of sources.

Cronbach's alpha reliability = 0.72

DISCUSSION

We began this article by noting the pivotal role faculties of education can play in socializing effective teachers who, in turn, affect the quality of schools and the quality of education. The socialization research literature suggests that norms of effective teaching are better internalized when organizational conditions are both cognitively challenging and affectively supportive. This article reports our develpment of a reliable and valid instrument to measure student teachers' quality of life in the cognitive domain.

The three dimensions of the quality of life of student teachers are appealing. It seems sensible that student teachers should be challenged to learn a considerable amount about the subject matter they plan to teach (the Subject Expertise dimension), the characteristics of their future pupils (the Development of Pupils dimension), and techniques for teaching those future pupils (the Methodology of Teaching dimension). In other words, these three dimensions constitute a minimal set of cognitive demands in faculties of

education. Interestingly, these dimensions are parallel to elements identified by Webb and Sherman (1989, p. 238) as the "teaching triangle," features that must be kept in balance for effective education to occur. They also suggest the "reflective awareness" characteristic of the best teachers (Shulman, 1986).

Unsolicited comments from student teachers who completed the questionnaire said it made sense to them to ask questions from these three dimensions of the cognitive domain. In space for open-ended comments at the end of the questionnaire we received hundreds of remarks such as: "The questions were *very* appropriate!"; "I do feel this questionnaire is of importance. Thank you!"; and "I was glad to have the opportunity to complete this survey. I feel that it is very well thought out—the questions were relevant." In short, the triangulation of these qualitative considerations with the quantitative evidence provided in this article suggests this instrument is meaningful to student teachers and potentially useful for assessing their experiences in faculties of education.

This instrument could prove useful in both academic and applied research. In academic research, variation in student teachers' perceptions regarding the cognitive demands in faculties of education may be used as either independent or dependent variables. The socialization theory supporting this instrument suggests variation in the cognitive domain of the quality of life of student teachers significantly affects internalization of norms of effective teaching. Accordingly, it seems reasonable that student teachers' perceptions of how cognitively demanding a faculty of education is would help explain their educational attainment. Alternatively, it also seems reasonable to think that the cognitive domain might be related to such student background characteristics as age, gender, social class, and ethnicity. If specific groups of student teachers are systematically disadvantaged in their quality of life, then appropriate remedial interventions could be considered.

Further, these quality of life scales may be useful in evaluation research, including diagnostic, formative, and summative assessments (Bloom, Hastings, & Madares, 1971; Mason & Bramble, 1989). In fact, these quality of student life scales have already proven useful in evaluating programs and courses in at least three faculties of education in Canada (Bulcock & Pereira-Mendoza, 1988). Recent evidence suggests accountability is becoming an important issue for faculties of education in both Canada and the United States (Cheney, 1990; Tausig, 1991). Students' increasing dissatisfaction with the quality of their experience is an important stimulus for evaluation of universities (Wilson, 1991). In this regard, our instrument for measuring the cognitive domain of the quality of student experiences in faculties of education can be useful for thinking more critically about the socialization of student teachers.

This report is part of an ongoing research program. In "A Theoretical Framework" (above) we noted that both the cognitive and the affective dimensions of the quality of university students' life should be assessed. This article presents our current conceptualization and instrumentation of the

cognitive domain. Our instrument for measuring the affective domain is found elsewhere (Roberts & Clifton, 1991a). That study, which used the instrument validation techniques reported here, found four dimensions of the affective domain with alpha reliabilities ranging from 0.75 to 0.93. A more detailed treatment of the history, conceptualization, and methodology for assessing both the cognitive and affective domains of the quality of life of university students is presented in Roberts and Clifton (1991b).

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