

## ARTICLES

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# THE EVOLUTION, VALIDATION, AND USE OF A PERSONAL FORM OF THE CATHOLIC SCHOOL CLASSROOM ENVIRONMENT QUESTIONNAIRE

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*The research reported in this article contributes to classroom environment research and Catholic education by describing the development, validation, and use of a personal form of the Catholic School Classroom Environment Questionnaire (CSCEQ). Using the class form of the CSCEQ as a basis, a 49-item instrument that assesses a student's perceptions of his or her own role in the class was developed and validated with a sample of 1317 students from 52 religious education classes in 17 Australian Catholic high schools. This instrument assesses seven classroom environment dimensions: Student Affiliation, Interactions, Cooperation, Task Orientation, Order and Organization, Individualization, and Teacher Control. The research revealed differences in the religious education classroom environment in Catholic boys', girls', and coeducational schools, differences between grade 9 and grade 12 classes, and differences between boys' and girls' perceptions of the environment in coeducational classrooms. This application of the CSCEQ's personal form demonstrates its usefulness as a research tool in Catholic high school religious education classes.*

The research reported in this article builds upon and extends psychosocial classroom environment research conducted in Australian Catholic high schools by reporting the evolution, validation, and use of a personal form of the Catholic School Classroom Environment Questionnaire (CSCEQ). Psychosocial environment encompasses those aspects of the environment that have a social bearing either in origin or outcomes. Used in this context, classroom environment or climate refers to the psychological meaning of classroom events rather than the physical environment. The work described here is distinctive in that it is the first attempt to modify Dorman's (1997a,

1997b) conventional class form of the CSCEQ (in which students report their perceptions of the class as a whole) to a personal form (in which a student reports perceptions of his or her role in the classroom). Discussion in this article is arranged in five major sections: Australian Catholic schooling, the field of learning environment research, the need for a personal form of the CSCEQ, the evolution and validation of the personal form of the CSCEQ, and the use of this instrument in Catholic high school religion classes.

## AUSTRALIAN CATHOLIC SCHOOLING

Like many western countries, Australia has a well-established and well-supported system of Catholic schools. While these schools have teaching and learning activities similar to any other school, their ultimate purpose is quite distinctive: to produce graduates who are committed to, and act upon, a Christian view of the world. As a means of producing graduates with this characteristic, Catholic schools should possess distinctive learning environments. This view was implicit in the foundation of Australian Catholic schools last century and has been restated in Vatican II documents and various Australian Catholic church and school documents (Abbott, 1966; Congregation for Catholic Education, 1988; Queensland Catholic Education Commission, 1978; Sacred Congregation for Catholic Education, 1977). Bathersby, the Catholic Archbishop of Brisbane, asserted that "it would be a complete misunderstanding to see the Catholic school as just any other with a daily religion lesson added. The whole atmosphere of the school is one of shared faith" (1992, p. 2).

It is reasonable to believe that Catholic schools cannot teach Christianity if the atmosphere enveloping the school and its classrooms is devoid of a Christian ethos. Buetow (1988) introduced the term "spiritual atmosphere" to describe the climate of respect, mutual aid, and evangelical joy; an enlivened Gospel spirit of charity and liberty; and the practice of collegiality, cooperation, participation, and co-responsibility that should pervade Catholic school classrooms. Leavey's (1972) seminal Australian research in Catholic girls' high schools concluded that unless the students' experiences of the procedures of their school reinforce the content of the Christian message, then that message tends not to be accepted. Specifically, Leavey found that school procedures, teachers' attitudes, and personal relationships mediated what students learned in religious education classes. That is, for a significant number of students, the medium was the message. Having positive classroom environments is very important if Catholic schools are to reflect the Gospel message and avoid charges of hypocrisy.

## THE FIELD OF CLASSROOM ENVIRONMENT RESEARCH

The conceptualization and assessment of the psychosocial environment of classes have become important fields of research (see Fraser, 1998a, 1998b). The particular approach used in most of this research has been to define classroom environment in terms of the perceptions of students and teachers. Lewin's (1936) field theory is the genesis for this work and the formula  $B = f(P, E)$  emphasizes the importance of the person ( $P$ ) and his or her perceptions of the environment ( $E$ ) as predictors of behavior ( $B$ ). Murray (1938), Stern, Stein, and Bloom (1956), and Pace and Stern (1958) developed a need-pressure theory in which people are conceptualized in terms of their psychological needs and the environment in terms of its press. Within this theory, needs and press interact to produce and guide behavior. This theory has been the basis for person-environment fit studies in which the congruence between actual and preferred environments is assessed (Fraser, 1998a).

Empirical evidence shows that psychosocial dimensions of the classroom environment are strong predictors of student outcomes across a range of subject areas of the formal school curriculum. Previous studies conducted in science classrooms have established consistent and convincing support for the predictive validity of student perceptions of the classroom learning environment in accounting for appreciable amounts of variance in student cognitive outcomes and attitudes toward science (Fisher, Henderson & Fraser, 1997; McRobbie & Fraser, 1993). In Singapore, Wong and Fraser (1996) employed the *Science Laboratory Environment Inventory* to establish positive associations between student cohesiveness, integration, rule clarity, and material environment in chemistry classes and students' attitudes toward chemistry. Other studies have used classroom environment scales as dependent variables in investigating variations in environment across different settings. Studies in the United States have shown that classroom environment varies according to type of public school (Trickett, 1978) and between coeducational and single-sex schools (Trickett, Trickett, Castro, & Schaffner, 1982).

Some areas of contemporary classroom environment research include assessing preservice, novice, and expert teachers' perceptions of their classroom environment (Bartelheim, 1998; O'Connor & Fish, 1998); investigating constructivist learning environments in science classes (Fisher & Huei-Baik, 1999); establishing links between school-level and classroom-level environments (Dorman, Fraser, & McRobbie, 1997); and the relationship between teacher personality and interpersonal behavior (Fisher, Kent, & Fraser, 1998). These studies highlight the growing recognition of the learning environment as a central component of the lived curriculum of schools. Research on the environment in Catholic school religion classes has employed the class form of the CSCEQ (Dorman, 1997a, 1997b). This study

revealed differences in religion classroom environment among different types of Catholic high schools (viz., coeducational, boys', girls'), differences in religion classroom environment according to grade, and differences between students' and teachers' perceptions of the religion classroom environment.

Another area of research examined the development and validation of classroom environment instruments. As teachers and administrators have busy, complex roles, the availability of a suite of validated instruments is very helpful. Since the 1960s, instruments to assess classroom learning environments in elementary schools (*My Class Inventory*), high schools (*Classroom Environment Scale, Individualized Classroom Environment Questionnaire, Learning Environment Inventory*), and universities (*College and University Classroom Environment Inventory*) have been developed. Other instruments have been designed to assess particular types of classrooms (e.g., *Science Laboratory Environment Inventory, Constructivist Learning Environment Survey*). Discussion of these instruments is beyond the scope of this paper (see Fraser, 1998a).

## THE NEED FOR A PERSONAL FORM OF THE CSCEQ

An important direction of recent classroom environment research has been the use of personal forms in contrast to class forms of the assessing instrument. Whereas the conventional class form elicits students' perceptions of the learning environment of the class as a whole, personal forms ask students to report their personal perceptions of their role in the learning environment (McRobbie, Fisher, & Wong, 1998). When subgroups of students within a class are compared (e.g., male and female), it is more meaningful to elicit responses based on personal roles in the class rather than their perceptions of the class as a whole. Fraser and Tobin's (1991) study of target students (i.e., students who monopolize verbal interaction) demonstrated that classes have subgroups and that classroom environment instruments need to be able to detect differences between individuals or subgroups within a class. The use of the personal and class forms of the *Science Laboratory Environment Inventory* (Fraser & McRobbie, 1995) in a large cross-national study revealed that the personal and class forms each accounted for unique variance in student attitudes that could not be explained by the other form. The development and use of a personal form of the CSCEQ is consistent with a constructivist theory of knowledge (von Glasersfeld, 1989). Within this view, knowledge resides in individuals who try to make sense of classroom events. Accordingly, classroom environment is constructed individually and a personal form of the CSCEQ is desirable if such a theoretical view is to be accommodated.

## DEVELOPMENT AND VALIDATION OF A PERSONAL FORM OF THE CSCEQ

### DEVELOPMENT OF PERSONAL FORM FROM CLASS FORM

The original class form of the CSCEQ consisted of 66 items assigned to seven underlying scales: Student Affiliation, Interactions, Cooperation, Task Orientation, Order and Organization, Individualization, and Teacher Control. Details on its development and validation are provided elsewhere (Dorman et al., 1997). Four noteworthy features of the class form of the CSCEQ include:

- *Consistency with Catholic school literature.* The CSCEQ is consistent with literature on the purpose and mission of Australian Catholic schooling.
- *Salience to teachers and students.* The CSCEQ taps dimensions of the environment considered important by teachers and students involved in contemporary Catholic schools. Stakeholders were consulted widely during the CSCEQ's original development.
- *Coverage of Moos's (1979) three general categories of human environments.* An important characteristic of the CSCEQ is that it provides coverage of Moos's (1979) three categories of human environments: Relationship dimensions (the nature and intensity of personal relationships), Personal Growth dimensions (personal development and self-enhancement), and System Maintenance and System Change dimensions (extent to which the environment is orderly, clear in expectations, maintains control, and is responsive to change).
- *Economy.* In addition to the development of a personal form, it was decided to shorten the CSCEQ to 49 items to reduce respondent fatigue (i.e., seven 7-item scales). These items were selected using validation data from the CSCEQ's original development and validation.

The CSCEQ uses a five-point Likert scale response format (viz., Strongly Agree, Agree, Neither/Not Sure, Disagree, Strongly Disagree). To develop the personal form of the CSCEQ, the 49 items selected from the class form were reworded to provide respondents' perceptions of their own role within the classroom. Table 1 provides descriptive information for the seven scales of the CSCEQ and illustrates differences in the wording of items for the class and personal forms. Seventeen negatively-worded items of the personal form of the CSCEQ are reverse scored.

**Table 1**  
**Descriptive Information for Class and Personal Forms of the Catholic School Classroom Environment Questionnaire**

| Scale Name           | Scale Description   | Moos's Schema <sup>a</sup> | Sample Items   |   |
|----------------------|---|----------------------------|--|---|
|                      |   |                            | Class Form   | Personal Form   |
| Student Affiliation  | Extent to which students know, help, and are friendly towards each other.   | R                          | All students know each other very well. (+)  | I know other students very well. (+)                                      |
| Interactions         | Extent to which teacher-student interactions emphasize a concern for the personal welfare and social growth of the student.             | R                          | Students get on well with the teacher. (+)   | I get on well with my teacher. (+)  |
| Cooperation          | Extent to which students cooperate rather than compete with each other.   | P                          | Most students are willing to help students who are having trouble with their work. (+) | I am willing to help students who are having trouble with their work. (+) |
| Task Orientation     | Extent to which it is important to complete activities planned and to stay on the subject matter.                                       | P                          | Almost all class time is spent doing work. (+)   | Almost all my class time is spent doing work. (+)                         |
| Order & Organization | Emphasis on students behaving in an orderly, quiet, and polite manner and on the overall organization of classroom activities.          | S                          | Students fool around in this class. (-)  | I fool around in this class. (-)  |
| Individualization    | Extent to which students are allowed to make decisions and are treated differently according to ability, interest, and rate of working. | S                          | Students are allowed to choose activities in the classroom. (+)                        | I am allowed to choose the activities I do in the classroom. (+)          |
| Teacher Control      | The number of rules, how strictly rules are enforced, and how severely infractions are punished.  | S                          | Students don't have to stick to the rules in this class. (-)                           | I don't have to stick to the rules in this class. (-)                     |

<sup>a</sup>R: Relationship, P: Personal Growth, S: System Maintenance and System Change

## SAMPLE

A random sample of 20 Catholic high schools from one Catholic diocese in New South Wales, Australia, was invited to participate in the study. These schools were identified using information provided by the diocesan Catholic Education Office which has overall administrative responsibility for schools in the diocese. Of these schools, 17 elected to participate in the study. The sample consisted of four boys', five girls' and eight coeducational schools, reflecting the diversity in the school population of the diocese. Where possible, two classes of grade 9 religious education and grade 12 religious education were surveyed in each school. The total sample consisted of 1317 students whose ages ranged from 13 to 18 years of age. In New South Wales, students are usually 14 or 15 years of age in grade 9 and 17 or 18 years of age in grade 12. Table 2 provides descriptive information for this sample. Although school personnel (usually the religious education coordinator) selected these classes, it is important to note that students in a particular grade are almost always assigned to religious education classes in Catholic schools on a random basis. Accordingly, the ability of the school to select a biased sample was quite low. Because analyses used the class mean as the unit of analysis, validation data for both the individual and class means as units of analysis are reported below as recommended by Sirotnik (1980).

**Table 2**  
**Description of Sample by School Type and Year Level**

| Year Level | Sample Size |          |               |           |
|------------|-------------|----------|---------------|-----------|
|            | School Type |          |               | Total     |
|            | Boys'       | Girls'   | Coeducational |           |
| Year 9     | 8 (205)     | 10 (262) | 14 (381)      | 32 (848)  |
| Year 12    | 2 (38)      | 6 (155)  | 12 (276)      | 20 (469)  |
| Total      | 10 (243)    | 16 (417) | 26 (657)      | 52 (1317) |

Note: The number of students is given in parentheses.

## VALIDATION DATA

### Internal consistency reliability

Estimates of the internal consistency reliability of the seven scales of the CSCEQ were calculated for the above sample using Cronbach's coefficient alpha. Table 3 shows the coefficient alpha for each scale of the CSCEQ using the individual student and class means as units of statistical analysis. As expected, alpha coefficients based on class means are somewhat larger than those obtained with the individual as the unit of analysis. These values suggest that, apart from the Individualization scale, each scale has acceptable internal consistency for both the individual and the class means as the unit of analysis. For both units of analysis, the Individualization scale does not have

**Table 3**  
**Internal Consistency (Alpha Reliability), Discriminant Validity (Mean Correlation with Other Scales), and ANOVA Results for the CSCEQ (Personal Form) for Two Units of Analysis (N = 1317 students in 52 classes)**

| Scale                | Alpha Reliability |            | Mean Correlation |            | ANOVA Results |                  |
|----------------------|-------------------|------------|------------------|------------|---------------|------------------|
|                      | Student           | Class Mean | Student          | Class Mean | F (51, 1266)  | Eta <sup>2</sup> |
| Student Affiliation  | .66               | .73        | .24              | .44        | 3.1*          | .13              |
| Interactions         | .88               | .94        | .35              | .38        | 3.4*          | .14              |
| Cooperation          | .73               | .89        | .33              | .42        | 5.4*          | .20              |
| Task Orientation     | .75               | .84        | .33              | .43        | 4.0*          | .16              |
| Order & Organization | .78               | .87        | .32              | .42        | 5.5*          | .20              |
| Individualization    | .45               | .40        | .16              | .12        | 2.2*          | .08              |
| Teacher Control      | .69               | .87        | .27              | .33        | 5.3*          | .18              |

\* $p < .001$

satisfactory reliability due to low scale variances. Removal of any one item did not improve scale reliability and the results of subsequent analyses involving this scale need to be interpreted with caution.

### Discriminant validity

An important characteristic of a scale is that it assesses a relatively distinct construct. Significant scale overlap contravenes parsimony and confounds the interpretation of findings. Table 3 reports discriminant validity data using the mean correlation of a scale with the remaining six scales as a convenient index. These data indicate that the scales do overlap but not to the extent that would violate the psychometric structure of the instrument. Additionally, the data compare favorably with discriminant validity data of well-established classroom environment instruments (see Fraser, 1998a).

### Ability to differentiate between classes

Another desirable characteristic of a classroom environment scale is that it is sensitive to the differences in classroom environments. This characteristic of the CSCEQ was investigated with a series of one-way ANOVAs for classroom environment scales with the student as the unit of analysis and class membership as the main effect (see Table 3). These analyses showed that each scale of the instrument differentiated significantly between classes ( $p < .001$ ). The eta<sup>2</sup> statistic, which is a ratio of "between" to "total" sums of squares (Cohen & Cohen, 1975), indicates that the proportion of variance explained by class membership ranged from 8% for the Individualization scale to 20% for the Cooperation and Order and Organization scales.



## **APPLICATION OF THE PERSONAL FORM OF THE CSCEQ**

To illustrate the usefulness of the personal form of the CSCEQ, this section reports comparisons of environment in religion classes in Australian Catholic high schools. Using the instrument validation sample described in Table 2, three specific research questions were investigated:

- To what extent do the religion classroom environments in boys', girls', and coeducational Catholic high schools differ?
- To what extent do students in grade 9 and grade 12 differ in their perceptions of their religion classroom environment?
- To what extent do boys and girls in coeducational Catholic high schools differ in their perceptions of their religion classroom environment?

Because religion classes were the primary sampling unit, the unit of analysis used in all comparisons was the class rather than the individual. Using the individual as the unit of analysis with a sample of 1317 students would employ a very small estimate of the sampling error and subsequent analyses could be statistically significant but not practically significant. Accordingly, scale scores for each student were used to calculate class means with the final data set consisting of 52 class means for each of the seven scales of the CSCEQ. The third research question required gender comparisons and involved the use of gender class means, the calculation of which is explained later in this section.

## **DIFFERENCES BETWEEN CLASSROOM ENVIRONMENT IN CATHOLIC BOYS', GIRLS', AND COEDUCATIONAL SCHOOLS**

A two-way MANOVA, with the set of seven classroom environment scales as the dependent variables and school type and grade as the independent variables, was performed. Details of these tests are shown in Table 4. The school type by grade interaction was not significant; however, because the school type effect was significant in the multivariate analysis ( $p < .001$ ), univariate  $F$  tests were interpreted. These tests revealed that the three school types differed significantly on Cooperation and Individualization.

Tukey's post-hoc procedure indicated significant differences among all three school types for the Cooperation scale with boys' schools ( $M = 23.79$ ) significantly lower than coeducational schools ( $M = 25.43$ ) which, in turn, were significantly lower than girls' schools ( $M = 27.29$ ). For the Individualization scale, the significant differences were between boys' schools ( $M = 17.79$ ) and girls' schools ( $M = 18.95$ ) and between boys' schools and coeducational schools ( $M = 18.80$ ). An effect size was calculat-

**Table 4**  
**MANOVA and ANOVA Results**

| Grade and School Type <sup>a</sup> |                  |       |        | Grade and Gender <sup>b</sup> |                |                  |      |        |                     |      |         |
|------------------------------------|------------------|-------|--------|-------------------------------|----------------|------------------|------|--------|---------------------|------|---------|
| MANOVA                             |                  | ANOVA |        | MANOVA                        |                | ANOVA            |      |        |                     |      |         |
| Effect                             | Wilks' $\lambda$ | df    | F      | Scale                         | Effect         | Wilks' $\lambda$ | df   | Scale  | F                   | df   | F       |
| Grade                              | .67              | 7,40  | 2.79*  | Interactions                  | Grade          | .53              | 7,18 | 2.29   |                     |      |         |
|                                    |                  |       |        | Teacher Control               |                |                  |      |        |                     |      |         |
| School Type                        | .29              | 14,80 | 4.87** | Cooperation                   | Gender         | .27              | 7,18 | 6.76** | Student Affiliation | 1,24 | 4.28*   |
|                                    |                  |       |        | Individualization             | Grade x Gender | .95              | 7,18 | .14    | Cooperation         | 1,24 | 29.59** |
| Grade x School Type                | .69              | 14,80 | 1.12   |                               |                |                  |      |        |                     |      |         |

Note: Only scales with statistically significant differences in scores have been reported in ANOVA columns.

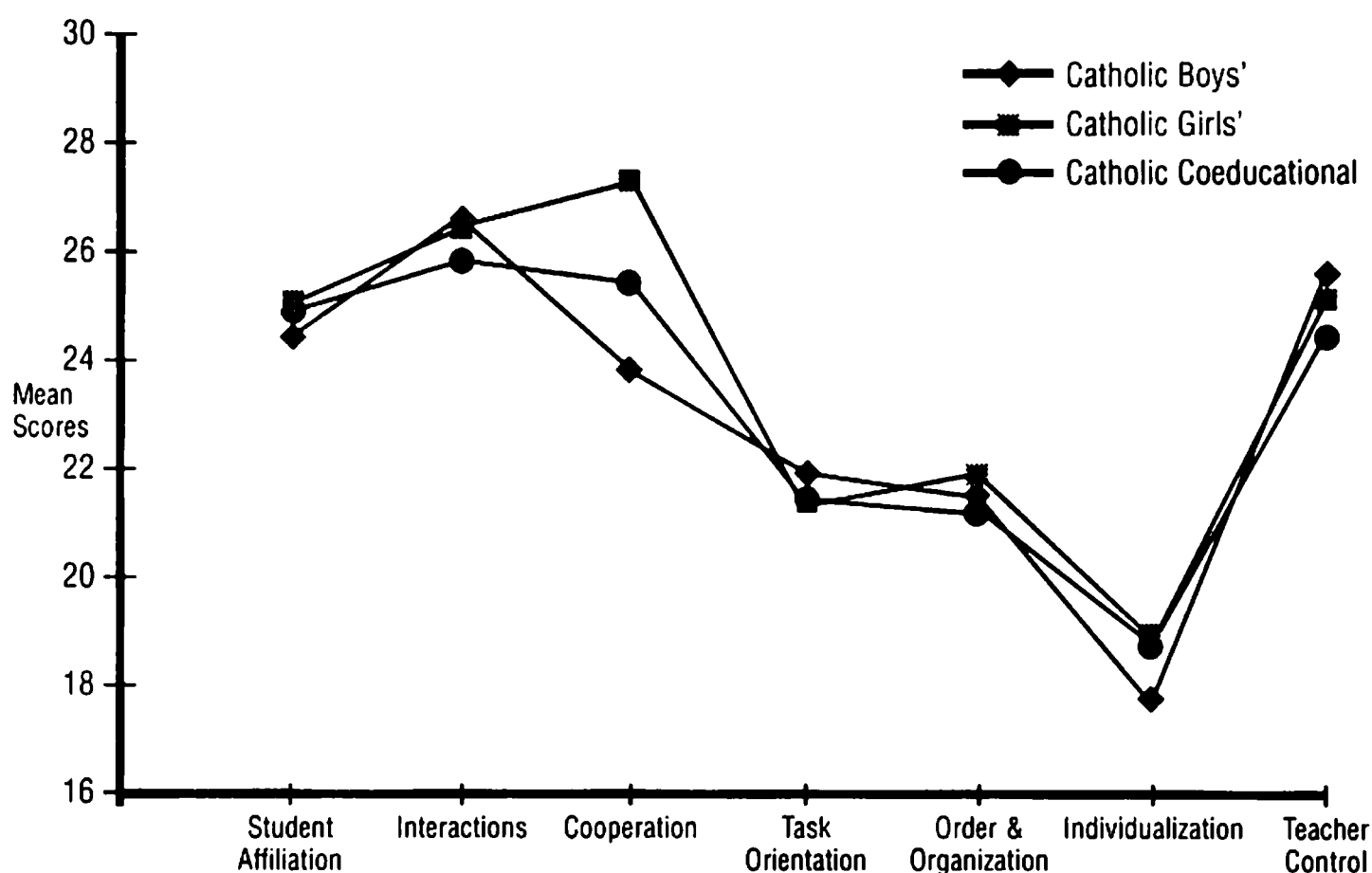
<sup>a</sup>In these analyses, grade and school type were between-subject variables.

<sup>b</sup>In these analyses, grade was the between-subjects variable and gender was the within-subjects variable.

\* $p < .05$  \*\* $p < .001$

ed for each significant comparison using the difference between group means as a fraction of the full sample standard deviation as a convenient index (Cohen, 1977). In general, these effect sizes were very large and ranged from 0.85 for the comparison of Cooperation in boys' and coeducational schools to 1.75 for Cooperation in boys' and girls' schools. An effect size of 1.75 is extremely large for this research tradition and it confirms the sensitivity of the CSCEQ to different school settings. Figure 1 shows the results for the seven scales of the CSCEQ.

**Figure 1**  
**Mean Scores for Three Types of Catholic Schools**  
**for Seven Scales of the CSCEQ**  
**(N = 52 class means)**



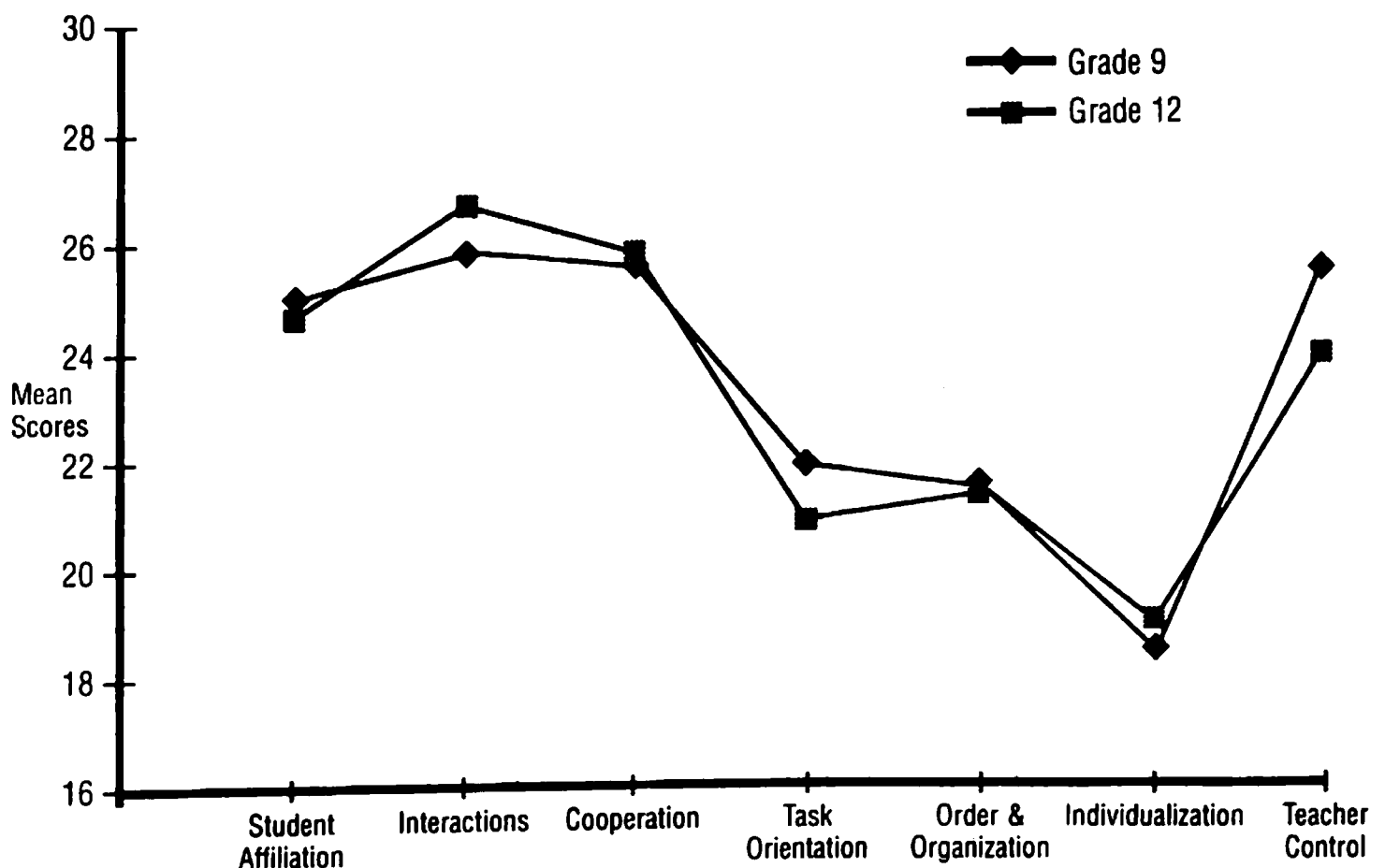
These results are the first to be collected with the new personal form of the CSCEQ. Accordingly, there are no previous studies with which direct comparisons can be drawn. In the United States, Trickett et al. (1982) used the *Classroom Environment Scale* (Moos & Trickett, 1987) to compare the classroom environment in single-sex and coeducational schools. Results showed that, compared to classes in coeducational schools, students in single-sex schools perceived greater Student Affiliation, Involvement, Task Orientation, Order and Organization, and Teacher Control in their classrooms. However, a major problem with the Trickett et al. study is that data from boys' and girls' schools were pooled to form a data set for single-sex schools. Employing the class form of the CSCEQ introduced earlier in this article, Dorman et al. (1997) revealed that, in general, classes in Catholic

girls' schools had more positive environments than classes in Catholic boys' and coeducational schools. The results of the present study are in broad agreement with these earlier studies. For example, Student Affiliation, Cooperation, Order and Organization, and Individualization were higher in girls' school classes compared to boys' school classes. Differences between girls' and boys' school classes for the remaining three scales were small. For all scales, scores for coeducational school classes were below scale scores for at least one of the remaining school types.

## DIFFERENCES BETWEEN CLASSROOM ENVIRONMENT IN DIFFERENT GRADES

In the MANOVA previously described, the effect of grade was significant ( $p < .05$ ). As shown in Table 4, univariate  $F$  tests investigating the effect of grade on classroom environment were significant ( $p < .05$ ) for two scales, Interactions and Teacher Control. Compared to grade 9 students, grade 12 students perceived significantly higher levels of Interactions (grade 9:  $M = 25.83$ , grade 12:  $M = 26.74$ ) but lower levels of Teacher Control (grade 9:  $M = 25.48$ , grade 12:  $M = 23.85$ ). Moderate and large effect sizes for these comparisons were recorded (0.45 and 0.90 respectively). Figure 2 shows the sample data.

**Figure 2**  
**Mean Scores for Grade 9 and Grade 12 Classes**  
**for Seven Scales of the CSCEQ**  
 (N = 52 class means)



These results are consistent with three previous studies on the effect of grade on classroom environment (Dorman, Fraser, & McRobbie, 1994; Randhawa & Michayluk, 1975; Welch, 1979). Overall, these studies showed that as grade increased Cooperation increased but Task Orientation and Teacher Control decreased. In the present study, Individualization was found to be greater in grade 12 classes compared to grade 9 classes. This finding is in agreement with Dorman et al.'s study which was conducted in religion and science classes in Catholic high schools.

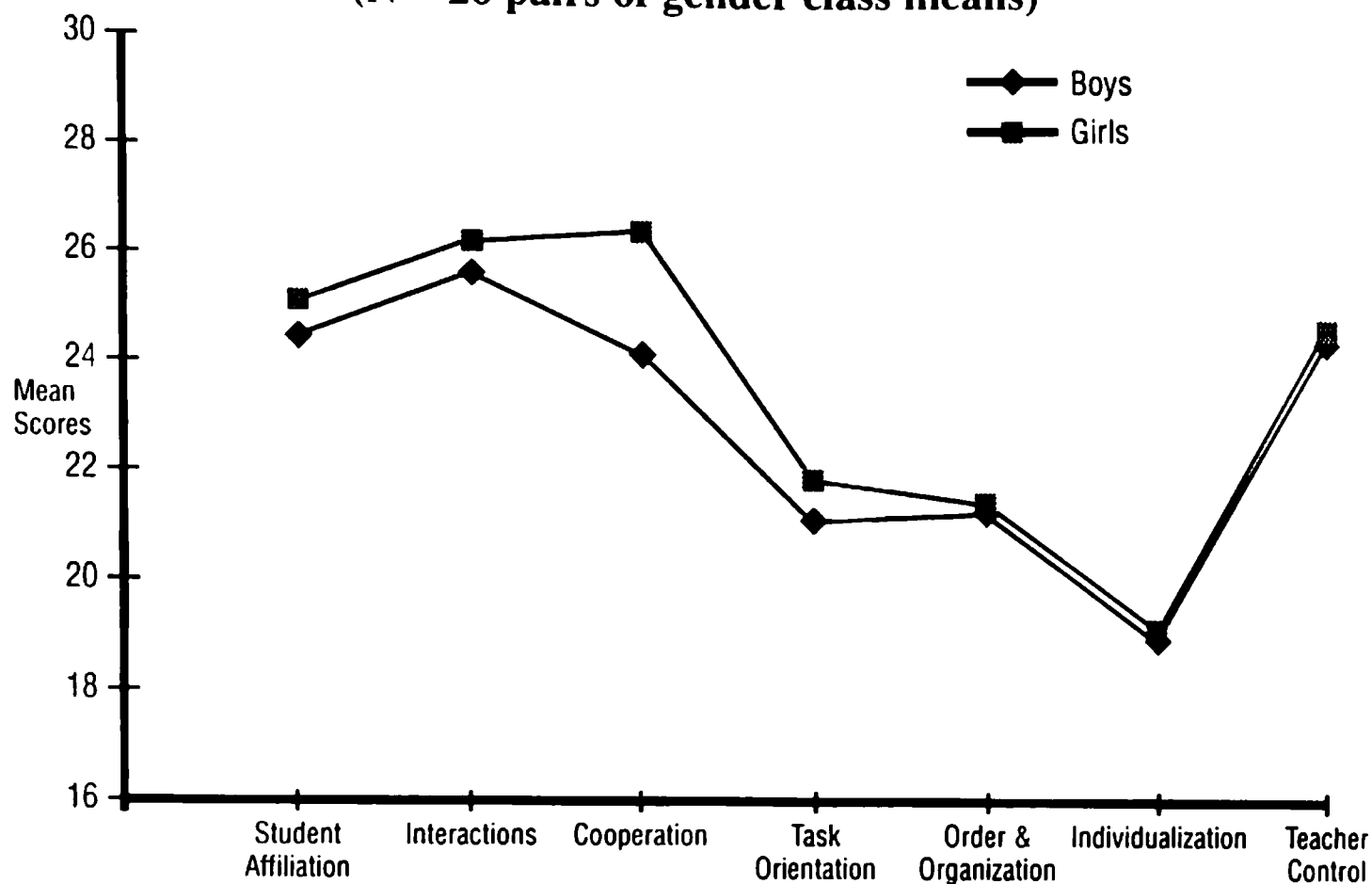
## **GENDER DIFFERENCES IN PERCEPTIONS OF ENVIRONMENT IN COEDUCATIONAL CLASSROOMS**

In this study, classroom environment data were collected from students in 26 coeducational classes. To compare male and female perceptions of the environment in these classes, gender means for each class were computed for each of the seven CSCEQ scales. That is, the scores in each class were used to calculate an average result for boys and an average result for girls for that class. This calculation was performed for each of the seven scales independently. Using within-class gender averages in subsequent data analysis preserved the independence of classes. This approach is preferable to comparing pooled boy data with pooled girl data for the 26 classes. Accordingly, the data set consisted of 26 matched pairs of gender means for each scale of the CSCEQ.

To explore differences between the perceptions of girls and boys, a repeated measures MANOVA with gender as a within-subjects effect and grade as a between-subjects effect was performed. Grade was included in the analysis to check for interaction effects. The MANOVA revealed no significant interaction effects. The effect of gender was significant ( $p < .05$ ) with  $F$  univariate tests indicating significant differences for two scales, Student Affiliation and Cooperation (see Table 4). For both of these scales, boys scored lower than girls (Student Affiliation:  $M = 24.5$ ,  $M = 25.21$ ; Cooperation:  $M = 24.18$ ,  $M = 26.45$ , respectively). Effect sizes were 0.50 and 1.44, respectively. Figure 3 illustrates the results which show a consistent pattern of girls perceiving the classroom more positively than boys.

The pattern of these findings is remarkably similar to the findings of Dorman et al.'s (1994) study of gender differences in 64 coeducational religion and science classes in Catholic high schools. Using the class form of the CSCEQ, Dorman et al. found that, compared to boys, girls perceived the same class as having higher levels of Student Affiliation, Interactions, Cooperation, Task Orientation, Order and Organization, and Teacher Control but a lower level of Individualization. This description fits the profile of the present results shown in Figure 3. Additionally, the results shown in Figure 3 are generally consistent with studies by Lawrenz (1987) in Arizona, Owens

**Figure 3**  
**Mean Scores for Boys and Girls in Coeducational Classes**  
**for Seven Scales of the CSCEQ**  
 (N = 26 pairs of gender class means)



(1985) in Sydney and Minnesota, and Wong and Fraser (1996) in Singapore. For example, the latter study revealed that in Singapore high schools, female students held more favorable perceptions of chemistry classes than male students.

## POTENTIAL USES OF THE CSCEQ

The personal form of the CSCEQ has the potential to assist teachers and researchers associated with Catholic schools in at least two areas. First, it could be used in outcomes studies in which environment in classrooms is linked with student cognitive and affective outcomes. For example, environment in religious education classes and student attitudes toward Christianity could be investigated. Second, the CSCEQ could be employed in person-environment fit studies in which students respond to two forms of the CSCEQ. The first form asks students for their perceptions of the actual environment and the second form elicits information on their preferred classroom environment. Using these data, teachers can modify classroom practices to improve the congruency between actual and preferred environments. A five-step strategy is suggested. First, all students in the class respond to the preferred and actual forms of the CSCEQ. Second, feedback based on these results is provided to the teacher. Third, the teacher reflects on the results and

decides that some action to modify a particular result is warranted. Fourth, the teacher introduces an intervention strategy of about eight weeks' duration. Finally, the actual form of the CSCEQ is administered to the class to ascertain whether students are perceiving their classrooms differently.

## CONCLUSION

The purpose of this paper has been to describe the evolution, validation, and use of a personal form of the Catholic School Classroom Environment Questionnaire (CSCEQ). By assessing the individual's perceptions of his or her role in the classroom, this instrument reflects the latest trends in learning environment research. The CSCEQ assesses seven distinct dimensions of classroom environment in Catholic high schools: Student Affiliation, Interactions, Cooperation, Task Orientation, Order and Organization, Individualization, and Teacher Control. Noteworthy design features of this instrument include its consistency with Catholic school literature, its salience to teachers and students, and coverage of Moos's (1979) three general categories of human environments. Given these characteristics, teachers and administrators should feel confident in using the CSCEQ in classrooms. Additionally, the CSCEQ is highly economical in that it takes approximately 15 minutes to administer its 49 items and can be scored efficiently by hand or computer.

The application of the CSCEQ in 52 Catholic high school classes illustrates its usefulness as a research tool. As the atmosphere of Catholic school classes is crucial to the maintenance of a Catholic ethos, it is hoped that this latest form of the CSCEQ will encourage researchers, school administrators, and teachers to investigate psychosocial environments in Catholic schools.

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