

January 1981

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### Recommended Citation

Rentoul, A. J., & Fraser, B. J. (1981). Changes in Beginning Teachers' Attitudes Towards Individualised Teaching Approaches During the First Year of Teaching. *Australian Journal of Teacher Education*, 6(1). <https://dx.doi.org/10.14221/ajte.1981v6n1.1>

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**CHANGES IN BEGINNING TEACHERS' ATTITUDES  
TOWARDS INDIVIDUALISED TEACHING APPROACHES  
DURING THE FIRST YEAR OF TEACHING**

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It is generally acknowledged that the beginning months of teaching can be a formidable and even painful ordeal for many teachers (Anstee, 1976; Hannam, Smyth & Stephenson, 1976; Lortie, 1975; Power, in press; Wright & Tuska, 1968). For this reason, the beginning teacher has been the focus in a number of key studies conducted recently in various countries (see Berliner, Fisher, Filby & Marliave, 1978; Tisher, Fyfield & Taylor, 1979; Ziechner, 1979). Also the recent Auchmuty Report has recommended that teacher education research should include "longitudinal studies of the socialisation of teachers, covering . . . the early years of teaching, with particular reference to the acquisition of professional attitudes and values" (Auchmuty, 1980, p. 218). The present research is consistent with this recommendation because it represents one of the few existing studies of specific pedagogical attitudes among beginning teachers.

The study of beginning teachers' attitudes is important because of the possibility that certain positive pedagogical attitudes developed during initial teacher training may be "disowned by beginning teachers in the harsh realities of the classroom" (Marsh, 1976, p. 317). This possible shift in beginning teachers' attitudes during transition has been explained by Lacefield and Mahan (1979) in terms of a cognitive dissonance model in which their educational values "move towards" those of their schools in order to reduce dissonance. Moreover empirical studies (e.g., Campbell, Evans, Philp & Levis, 1977; Shipman, 1967) have shown that, while preservice training teachers' attitudes were similar to those held by college staff, these changed after training so that the attitudes of beginning teachers were more closely aligned with those expressed by the majority of teachers in their schools.

Related research (Hoy, 1968; Jacobs, 1968; Marsh, 1976) has revealed that beginning teachers have experienced declines in positive pedagogical attitudes, particularly those associated with classroom management and control. While some research on attitudes to classroom management and control exists, research on beginning teachers' attitudes to other equally

important aspects of teaching is virtually nonexistent (Power, 1979). For example, although there has been considerable interest recently in individualised teaching approaches involving open or inquiry-based classroom strategies, Marsh (1976) notes that there is a paucity of studies of beginning teachers' attitudes towards individualised teaching.

This study makes use of a new instrument in one of the first investigations of the changes occurring in beginning teachers' attitudes towards classroom individualisation during the first year as teachers in schools. The description of this study is organised below into the three main areas of (a) the measurement of teachers' attitudes to classroom individualisation, (b) changes occurring in beginning teachers' attitudes towards individualisation, and (c) predictors of beginning teachers' attitudes to individualisation.

### Measurement of Teacher Attitudes to Individualisation

Teachers' attitudes towards classroom individualisation were measured in the present study with a new instrument called the *Individualised Classroom Environment Questionnaire* (ICEQ). This instrument assesses five conceptually distinct dimensions of classroom individualisation, namely, *Personalisation*, *Participation*, *Independence*, *Investigation* and *Differentiation*. Altogether the ICEQ has four different forms which measure teacher perceptions of preferred classroom individualisation (Teacher Preferred form), teacher perceptions of actual classroom individualisation (Teacher Actual form), student perceptions of preferred classroom individualisation (Student Preferred form) and student perceptions of actual classroom individualisation (Student Actual form). Of these four forms, only the Teacher Preferred form (which measures teachers' attitudes to dimensions of classroom individualisation) was of interest in the present research, although studies employing other forms of the ICEQ have been reported elsewhere (Fraser & Rentoul, 1980; Rentoul & Fraser, 1980a).

The development of the ICEQ, which has been described in detail elsewhere (Fraser, 1980; Rentoul & Fraser, 1979), was guided by the following three criteria:

1. Dimensions chosen characterised the classroom learning environment described in the literature of individualised education (e.g., Elliott & Adelman, 1975; Weisgerber, 1971) and in individualised curriculum materials.
2. Dimensions chosen provided coverage of the three general categories of dimensions delineated by Moos (Insel & Moos, 1974; Moos, 1974)

for conceptualising human environments. These three general categories are *Relationship Dimensions* (nature and intensity of personal relationships), *Personal Development Dimensions* (basic directions along which personal growth and self-enhancement tend to occur) and *System Maintenance and System Change Dimensions* (extent to which the environment is orderly, clear in expectation, maintains control, and is responsive to change).

3. Dimensions chosen and individual questionnaire items were considered salient and suitable by a group of educational researchers, practising teachers and secondary school students.

A most important step in developing the ICEQ involved modifying an original pool of items after receiving reactions from researchers, teachers and students. Another step consisted of further refining the scales to form a final version by application of item analysis techniques to data collected from several different samples. These procedures led to a final version of the ICEQ containing 50 items, with each of the five dimensions being assessed by 10 items. Each item is scored on a five-point scale with responses of Almost Never, Seldom, Sometimes, Often and Very Often. The scoring direction is reversed for approximately half of the items. Table 1 clarifies the nature of the ICEQ by showing the classification of each scale according to Moos' scheme and by providing a scale description and sample item for each scale.

Table 1 also shows validation data obtained for the Teacher Preferred form of the ICEQ for two separate samples. The first sample consisted of 120 Sydney secondary and primary teachers, both experienced and in training, who responded to the ICEQ as part of a previous study in 1977. The second sample consisted of 34 beginning teachers in New South Wales who participated in the present study in 1978 during their first year of teaching after completion of their pre-service education at Macquarie University in Sydney. Also this sample of beginning teachers consisted of approximately equal numbers of male and female teachers, of teachers in suburban and country schools, and of science and social science teachers.

A desirable characteristic of any measuring instrument is internal consistency (the extent to which items in the same scale measure the same dimension). Table 1 shows that the internal consistency reliability coefficient (Cronbach's alpha) of different scales ranged from 0.72 to 0.86 for the previous sample and from 0.74 to 0.90 for the present sample, thus indicating satisfactory internal consistency for all ICEQ scales. Table 1 also reports data about the discriminant validity (the extent to which a given scale measures a unique dimension not measured by other

TABLE 1  
Descriptive Information and Validation Data for ICEQ

Scale Name	Moos' General Category	Description of Scale	Sample Item	Alpha Reliability		Mean Correlation with Other Scales
				Previous <sup>a</sup>	Present <sup>b</sup>	
Personalisation	Relationship	Emphasis on opportunities for individual students to interact with the teacher and on concern for the personal welfare and social growth of the individual.	The teacher considers students' feelings. (+)	0.78	0.74	0.35
Participation	Relationship	Extent to which students are encouraged to participate rather than be passive listeners.	The teacher lectures without students asking or answering questions. (-)	0.72	0.82	0.41
Independence	Personal development	Extent to which students are allowed to make decisions and have control over their own learning and behaviour.	Students choose their partners for group work. (+)	0.82	0.86	0.17
Investigation	Personal development	Emphasis on the skills and processes of inquiry and their use in problem-solving and investigation.	Students find out the answers to questions and problems from the teacher rather than from investigations. (-)	0.86	0.90	0.42
Differentiation	System maintenance	Emphasis on the selective treatment of students on the basis of ability, learning style, interests and rate of working.	Different students use different books, equipment and materials. (+)	0.79	0.81	0.30

Items designated (+) are scored 1, 2, 3, 4, 5, respectively, for the responses Almost Never, Seldom, Sometimes, Often, Very Often. Items designated (-) are scored in the reverse manner.

<sup>a</sup> The sample in a previous study consisted of 120 teachers. <sup>b</sup> The sample in the present study consisted of 34 teachers.

scales in the same instrument). The convenient index of discriminant validity used is the mean correlation of a scale with its other four scales. These values were found to range from 0.17 to 0.42 for the previous sample and from 0.16 to 0.34 for the present sample. This suggests that the ICEQ measures distinct although somewhat overlapping aspects of classroom environment.

### Changes in Attitudes to Individualisation

The design of the present investigation of changes in beginning teachers' attitudes to dimensions of classroom individualisation involved administering the ICEQ on two occasions approximately a year apart. In fact, the sample of 34 people responded to the ICEQ initially in 1977 as a pretest towards the end of their four years of teacher education, and again as a posttest towards the end of the first year as beginning teachers. Consequently, pretest-posttest changes on each ICEQ scale provided a measure of changes in beginning teachers' preferences for five dimensions of classroom individualisation.

Table 2 shows the pretest mean and posttest mean obtained for each ICEQ scale. The third column of figures shows that the difference in means occurring between pretest and posttest was relatively large for two scales. In fact, the magnitude of the pretest-posttest change was 2.5 (about two-thirds of a standard deviation) for the Personalisation scale

TABLE 2  
Changes in Beginning Teachers' Preferences for Classroom Individualisation

ICEQ Scale	Pretest Mean	Posttest Mean	Difference	Standard Deviation of Differences	t
Personalisation	40.4	42.9	2.5	5.0	2.9**
Participation	40.1	41.1	1.0	3.8	1.5 I
Independence	25.9	25.6	-0.3	6.1	-0.2
Investigation	35.8	38.7	2.9	7.2	2.3*
Differentiation	28.2	28.5	0.3	5.0	0.3

\* p < .05, \*\* p < .01

and 2.9 (about half a standard deviation) for the Investigation scale. The last column of figures in Table 2 shows the results of *t* tests for dependent samples for the statistical significance of changes on each ICEQ scale. The results indicate that changes occurring in preferences on both the Personalisation and Investigation scales were statistically significant ( $p < .05$ ). Furthermore, the directions of these two significant changes suggest that beginning teachers' attitudes towards or preferences for classroom Personalisation and Investigation became more positive during the interval between the end of preservice training and the end of nearly a year's full-time teaching. It is encouraging that, in contrast to the findings of previous studies of beginning teachers' attitudes towards management and control, the present results indicate an increase in positive attitude towards some aspects of classroom individualisation.

### Predictors of Attitudes to Individualisation

The magnitudes of the differences in means shown in Table 2 suggest that there was little consistent change in attitudes experienced on several ICEQ scales by the majority of the beginning teachers in the sample. Nevertheless, the magnitudes of the standard deviations of teachers' pretest-posttest changes suggest that generally individual beginning teachers did, in fact, experience appreciable changes in preferences on ICEQ scales, although the direction of changes was not the same for all teachers. The fact that different beginning teachers experienced attitude changes which varied in magnitude and sign justifies the investigation of predictors of attitude changes described in this section.

The three classes of predictors chosen were a curriculum materials variable, student preferences for individualisation, and school-level environment. Because there is some evidence that use of particular curriculum materials promotes changes in teachers' pedagogical attitudes (Fraser & Northfield, 1979), a variable designating whether individualised or conventional curriculum materials were being used in each beginning teacher's classroom was included as a predictor of changes in attitudes. Similarly, because of claims that student attitudes play an important role in the process of teacher socialisation (Lieberman & Miller, 1978), student preferences for individualisation were also included as predictors of changes in teachers' attitudes to individualisation. In fact, the Student Preferred form of the ICEQ was administered to one class taught by each beginning teacher, and class means were calculated for use in the analyses.

As processes of formal and informal socialisation are considered powerful determinants of beginning teacher attitudes (Eddy, 1969; Willower & Jones, 1963), it is desirable that forces operating in the school environment

are included in any study of predictors of beginning teachers' pedagogical attitudes. For example, Hannam, Smyth and Stephenson (1976) recognise that major preoccupations of the beginning teacher are relationships with teaching colleagues and the official and unofficial rules of the school. In the present research, five dimensions of school-level environment were chosen for inclusion as predictors of changes in beginning teachers' attitudes to individualisation. These were *Affiliation* (the extent to which teachers are assisted and accepted by colleagues), *Professional Interest* (the extent to which teachers show interest in their work and further professional development), *Achievement Orientation* (the extent to which the school values and expects high student achievement), *Formalisation* (the extent to which teachers are expected to comply with school rules and procedures) and *Innovativeness* (the extent to which the school fosters change and experimentation). These five scales were selected from a larger group of scales contained in the *School-Level Environment Questionnaire* (SLEQ) (Rentoul & Fraser, 1980b). When the SLEQ was administered to the present sample of 34 beginning teachers, the alpha reliability coefficient was found to be 0.85 for Affiliation, 0.81 for Professional Interest, 0.91 for Achievement Orientation, 0.68 for Formalisation, and 0.78 for Innovativeness.

The basic design of this study involved the prediction of beginning teachers' preferences for classroom individualisation from a set of eight predictor variables. The five criterion variables consisted of scores obtained on the Teacher Preferred form of the ICEQ by the sample of 34 beginning teachers during 1978. A separate analysis was performed for each of the five criterion variables using the following eight predictor variables: scores on the corresponding Teacher Preferred ICEQ scale at pretesting late in 1977 towards the end of preservice training; class mean scores on the corresponding Student Preferred ICEQ scale; a curriculum materials variable (defined in terms of usage of either individualised or conventional materials); and the five dimensions of school environment measured by the SLEQ.

Multiple regression techniques were highly appropriate for the present analyses, especially since it was desirable to test the combined effect of the block of five school-level environment variables prior to examining individual school environment predictors. In fact, tests for individual SLEQ scales were performed only if the block of five SLEQ scales together accounted for a significant amount of criterion variance at the 0.1 level of confidence. This approach provided reasonable protection against Type I errors while maintaining an adequate level of statistical power for the present relatively small sample size.

For each multiple regression analysis, pretest scores on the corresponding Teacher Preferred scale were entered first into the regression equation prior to the other predictors because this permitted exploration of predictors of the "changes" occurring in teachers' preferences during the time of transition from student teacher to beginning teacher (see Cohen & Cohen, 1975). As there were no strong grounds for an *a priori* ordering of the other predictors (i.e., corresponding Student Preferred scale, curriculum materials variable and block of school environment variables), these variables were entered simultaneously into the regression equation to provide the most conservative tests of relationships. That is, the effect of each of these predictors was estimated in terms of an increment in criterion variance beyond that attributable to all other predictors (including Teacher Preferred pretest).

Table 3 shows the results of these multiple regression analyses. The first column of figures shows that the full eight-term model accounted for between 31.7 and 50.4 per cent of the variance in scores on different preferred individualisation scales. A significant relationship ( $p < .05$ ) existed between the set of eight predictors and three ICEQ scales, namely, Participation, Independence and Differentiation. The second column of figures shows that scores on the corresponding Teacher Preferred scale accounted for a significant contribution to criterion variance of 27.0 per cent for the Participation scale, 15.2 per cent for the Independence scale and 19.1 per cent for the Differentiation scale. In each of these three cases, a positive relationship existed between Teacher Preferred scores at pretesting and posttesting.

The third column of Table 3 shows that scores on the corresponding Student Preferred scale accounted for between 0.9 and 12.8 per cent of the variance in Teacher Preferred posttest scores beyond that attributable to Teacher Preferred pretest scores, the curriculum variable and the block of school environment scales. This increment was significant ( $p < .05$ ) only for the Investigation scale, and the interpretation of this result was that a positive relationship existed between Teacher Preferred Investigation scores and Student Preferred Investigation scores. The fourth column of figures in the table indicates that the curriculum variable accounted for a non-significant increment (beyond that attributable to the other seven predictors) in the variance of Teacher Preferred individualisation scores of between 0.2 and 5.8 per cent for different ICEQ scales.

The fifth column in Table 3 shows that the block of five school environment variables accounted for an increment of between 7.5 and

TABLE 3

Percentage of Variance in Five Teacher Preferred Individualisation Scales Accounted for by Corresponding Teacher Preferred Individualisation Pretest, Corresponding Student Preferred Individualisation Scale, Curriculum Materials Variable, and Five School Environment Variables

Teacher Preferred Individualisation Scale	R (%) for Full 8-Term Model	R <sup>2</sup> (%) for Corres. Teacher Prefer. Pretest	Percentage of Variance			Unique $\Delta R$ (%) for Significant Individual Predictors
			Corres. Student Prefer. Scale	Unique $\Delta R^2$ (%) Preferred Pretest	Beyond Teacher Curriculum Materials Variable	
Personalisation	31.7	10.5	0.9	5.8	10.7	
Participation	45.4*	H 27.0*	2.9	2.3	7.5	
Independence	49.2*	H 15.2*	5.2	0.2	30.3*	L 11.1* (Form.) L 10.1* (Innov.)
Investigation	32.9	2.5	H 12.8*	0.3	16.0	
Differentiation	50.4*	H 19.1**	9.4	0.4	22.0 (.1)	L 10.1* (Form.)

(.1)  $p < .1$ , \*  $p < .05$ , \*\*  $p < .01$

H Higher scores on predictor variable were associated with higher teacher preferred individualisation scores.

L Lower scores on school environment scale were associated with higher teacher preferred individualisation scores.

30.3 per cent of the variance in Teacher Preferred individualisation scales (beyond that attributable to Teacher Preferred pretest, Student Preferred scores and curriculum materials). These increments were significant for two scales, namely, Independence ( $p < .05$ ) and Differentiation ( $p < .1$ ). When the variance attributable to the block of SLEQ scales was further partitioned for the Independence scale, it was found that the Formalisation scale accounted for a significant increment of 11.1 per cent in criterion variance (beyond Teacher Preferred pretest, Student Preferred scores and curriculum materials). The Innovativeness scale accounted for a further significant increment of 10.1 per cent in the variance of Preferred Independence scores. For the Differentiation scale, it was found that the Formalisation scale accounted for an increment of 10.1 per cent of criterion variance (beyond Teacher Preferred pretest, Student Preferred scores and curriculum materials).

The interpretation of the three significant findings for individual school environment variables were that teachers with less favourable attitudes towards classroom Independence were found in schools with greater Formalisation and Innovativeness, while teachers with less favourable attitudes towards classroom Differentiation were found in schools with more Formalisation. Certainly it is intuitively plausible that greater school Formalisation could promote in beginning teachers a less positive attitude towards dimensions of classroom individualisation such as Independence or Differentiation. Although there is some implausibility in the finding that greater Innovativeness in the school environment was linked with preferences for less classroom Independence, it is possible that the student control problems which can accompany school Innovativeness could lead to a less positive attitude towards catering for student Independence in the classroom. Caution should be exercised in placing too much weight on the findings for individual school environment variables, however, until the present research has been replicated.

### Conclusion

The article describes one of the few existing studies of changes occurring in beginning teachers' pedagogical attitudes during the first year of teaching after preservice education. Whereas previous research (Hoy, 1968; Marsh, 1976) has indicated declines in beginning teachers' attitudes to classroom management and control, it is encouraging that the present study has revealed statistically significant improvements in attitude towards two important aspects of classroom individualisation (namely, personalisation and investigation). The present investigation also has provided some tentative but promising evidence which suggests that the

changes occurring in beginning teachers' attitudes to individualisation were linked with student preferences for individualisation and with characteristics of the school-level environment, especially formalisation. Finally, it is hoped that others involved in teacher education might make use of the ICEQ in further research into beginning teachers' pedagogical attitudes.

### Notes

A copy of the ICEQ together with scoring instructions can be requested from Barry J. Fraser, School of Education, Macquarie University, North Ryde, N.S.W. 2113.

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