

Classroom Environment

Barry J. Fraser



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Croom Helm Ltd, Provident House, Burrell Row,
Beckenham, Kent BR3 1AT

Croom Helm Australia Pty Ltd, Suite 4, 6th Floor,
64-76 Kippax Street, Surry Hills, NSW 2010, Australia

British Library Cataloguing in Publication Data

Fraser, Barry J.

Classroom environment. — (Croom Helm curriculum
policy and research series)

1. Classroom utilization 2. Educational
psychology

I. Title

371.6'21 LB3011.5

ISBN 0-7099-1057-6

Croom Helm, 51 Washington Street, Dover,
New Hampshire 03820, USA

Library of Congress Cataloging in Publication Data

Fraser, Barry J.

Classroom environment.

(Croom Helm curriculum policy and research series)

Bibliography: p.

Includes indexes.

1. Classroom environment--Great Britain--evaluation.

2. School environment--Great Britain--evaluation.

I. Title. II. Series.

TC210.8.G7F72 371 85-29078

ISBN 0-7099-1057-6

Printed and bound in Great Britain
by Billing & Sons Limited, Worcester.

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FOREWORD

In recent years, schools and teachers have been increasingly subjected to judgments of performance based on simple measures of cognitive outcomes. Certainly it is right that students should be expected to demonstrate measurable skills, but this is only one of the objectives of schooling and exclusive attention to it can result in the destruction of the human qualities that make schooling a worthwhile experience for those engaged in it. One reaction to this current trend is to deny the relevance of quantitative measures — and they have well-known limitations. But another is to look for ways in which educational measurement can be used more sensitively and constructively. This is the thrust of Professor Fraser's book.

Curriculum consists not just of contents and outcomes — much as one might get that impression from much that is being done on the research and policy fronts. It also consists of places, typically classrooms, where the business of learning is transacted and it is on the quality of life lived in classrooms that many of the things we hope for from education depend — concern for community, concern for others, commitment to the task in hand. Also, as is shown in this book, the quality of classroom life is an important factor in the outcome measures to which so much interest is directed. But classroom climate, too, is susceptible to quantitative study and a considerable amount of work has recently been done in many countries towards the construction and refinement of techniques for investigating how teachers and students perceive the environments in which they work.

The present volume comes forward at a point when research on classroom climates can be said to have reached a level of practical and theoretical maturity. It offers a complete 'state of the art' account of the research that has been done, the measures that have been developed, and the potential these have for understanding classroom environment as a component of curriculum. It provides detailed consideration of how to plan and conduct research and how to analyse and interpret data. To this it adds an exhaustive and up to date bibliography and an appendix which reproduces three complete assessment instruments together with directions for use.

The material published here represents an essential resource for anyone engaged in classroom research. But it also points the way for the constructive use of classroom climate measures in the training

and professional development of teachers and in the evaluation of the work of schools. For the investigation of classroom environments does much more than provide us with research data. It helps us understand how learning outcomes are achieved and guides us towards practical steps for the improvement of schooling. Classroom climate data, unlike performance data, are not judgments on schools and teachers. They are, as Professor Fraser demonstrates, materials through which schools and teachers can better realize their educative potential.

William A. Reid University of Birmingham
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THE EDITORS

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Students spend a vast amount of time at school. Jackson's (1968) **Life in Classrooms** estimates that this is as high as approximately 7,000 hours by the end of primary school, whereas the title of Rutter et al.'s (1979) book **Fifteen Thousand Hours** suggests that this figure rises to 15,000 hours by the completion of secondary school. Students, therefore, certainly have a large stake in what happens to them at school and students' reactions to and perceptions of their school experiences are significant. Despite the obvious importance of what goes on in schools and classrooms, however, school evaluations and school-effects research have relied heavily and sometimes exclusively on the assessment of academic achievement and other valued learning outcomes. Although few responsible educators would dispute the worth of these outcome measures, they cannot give a complete picture of the educational process.

This book is devoted to one approach to conceptualizing, assessing and investigating what happens to students during their schooling. In particular, the main focus is upon students' and teachers' perceptions of important psychosocial aspects of the learning environments which pervade school classrooms. Clearly it is assumed here that having constructive classroom environments is an intrinsically valuable goal of schooling. But it should not be assumed that the equally important issue of student outcomes is ignored. Rather, the book presents compelling evidence that the classroom environment is such a potent determinant of student outcomes that it should not be ignored by those wishing to improve the effectiveness of schools.

In contrast to methods which rely on outside observers, the approach described in subsequent chapters defines classroom environment in terms of the shared perceptions of the students and sometimes the teachers in that environment. This has the dual advantage of characterizing the class through the eyes of the actual participants and capturing data which the observer could miss or consider unimportant. For example, students often ignore frequently occurring classroom stimuli and act in the light of how they expect the teacher to behave. Students are at a good vantage point to make judgments about classrooms because they have

encountered many different learning environments and have enough time in a class to form accurate impressions. Also, even if teachers are inconsistent in their day-to-day behaviour, they usually project a consistent image of the long-standing attributes of classroom environment. Although objective indexes of directly observed behaviour in classroom settings certainly have their place in educational research, they do not tell the whole story about the complex, weighed, subjective judgments made by students and others who have an important influence on learning.

This introductory chapter sets the scene for the remainder of the book by considering four important issues which recur in subsequent chapters. First, the method of assessing classroom environment in terms of students' and teachers' perceptions is compared with alternative approaches and the relative merits of perceptual measures are weighed. Second, a historical perspective is taken on past work which has influenced the ways of conceptualizing, assessing and investigating classroom environment described throughout this book. Third, the distinction between school-level and classroom-level environment is considered. Fourth, the important issue of choosing an appropriate level or unit of analysis for classroom environment work is discussed.

Approaches to Studying Classroom Environments

The use of students' and teachers' perceptions has been contrasted above with the method of direct observation which typically involves an external observer in systematic coding of classroom communication and events according to some category scheme (e.g., Rosenshine and Furst, 1973; Dunkin and Biddle, 1974). The distinction between the "objective" approach of directly observing the environment and the "subjective" approach based on milieu inhabitants' apprehension of the environment is widely recognized in the psychological literature (see Jessor and Jessor, 1973). In particular, Murray (1938) introduced the term **alpha press** to describe the environment as assessed by a detached observer and the term **beta press** to describe the perceived environment of milieu inhabitants.

Rosenshine (1970) makes the distinction between **low inference** and **high inference** measures of classroom environment. Low

inference measures tap specific explicit phenomena (e.g., the number of student questions), whereas high inference measures require the respondent to make a judgment about the meaning of classroom events (e.g., the degree of teacher friendliness). That is, compared with low inference measures, high inference measures are involved more with the psychological significance that classroom events have for students and teachers. Whereas it has been common for classroom observation schemes to focus upon low inference variables, perceptual measures have tended to focus on high inference variables. A notable exception to this rule, however, is Steele, House and Kerins' (1971) Class Activities Questionnaire which includes student perceptions of some low inference variables.

Fraser and Walberg (1981) outline some advantages which student perceptual measures have over observational techniques. First, paper-and-pencil perceptual measures are more economical than classroom observation techniques which involve the expense of trained outside observers. Second, perceptual measures are based on students' experiences over many lessons, while observational data usually are restricted to a very small number of lessons. Third, perceptual measures involve the pooled judgments of all students in a class, whereas observation techniques typically involve only a single observer. Fourth, students' perceptions, because they are the determinants of student behaviour more so than the real situation, can be more important than observed behaviours. Fifth, perceptual measures of classroom environment typically have been found to account for considerably more variance in student learning outcomes than have directly observed variables.

Another approach to studying classroom environments involves application of the techniques of naturalistic inquiry and case study which are well illustrated by the vivid descriptions of classroom settings found in popular books such as *To Sir With Love*, *Up the Down Staircase*, *Death at an Early Age* and *Thirty-Six Children*. Some good examples of classroom environment studies following these more qualitative approaches include Jackson (1968), Cusick (1973), Rutter et al. (1979) and *Case Studies in Science Education* (Stake and Easley, 1978). Cusick, for instance, gathered his descriptions during a six-month period in which he attended a high school daily, associated with students, went to class, ate in the cafeteria and took part in informal classroom and corridor activities.

Some of the other approaches to conceptualizing and assessing human environments delineated by Moos (1973b) include eco-

logical dimensions, behaviour settings and personal characteristics of milieu inhabitants. Ecological dimensions encompass meteorological and geographical dimensions, as well as the physical design and architectural features reviewed by Proshansky, Ittleson and Rivlin (1970) and Weinstein (1979). Behaviour settings, which are conceptualized as naturally occurring ecological units concerned with molar behaviour and the ecological context in which it occurs, are well illustrated by Barker and Gump's (1964) work in schools. In the third approach (e.g., Astin and Holland, 1961), the character of an environment is assumed to depend on the nature of its members, while the dominant features of an environment are considered to depend on its members' typical characteristics.

Very few studies have explored the convergent validity (Campbell and Fiske, 1959) of different methods of environmental assessment by investigating relationships between measures obtained with alternative measuring approaches. Nevertheless Kaye, Trickett and Quinlan (1976) reported an interesting study in which the two classroom environment characteristics of teacher support and teacher control were assessed using three different environmental assessment methods. These methods involved student perceptions as measured by some of the scales in the Classroom Environment Scale (Moos and Trickett, 1974), global ratings by outside observers, and the observation and classification of classroom interactions. Overall the findings suggested some convergence of the different methods of assessment and highlighted the desirability of more often using multiple methods of assessment in classroom environment research. More recently, Greene (1983) reported associations between student perceptions and external observations, and Schell (1984) investigated the relationship between observed verbal classroom behaviour and student-perceived classroom environment as measured by items selected from the Learning Environment Inventory (Fraser, Anderson and Walberg, 1982). Schell's study not only confirmed the existence of statistically significant relationships between direct observations and student perceptions, but again reminded researchers that each method makes a distinct contribution to the assessment of classroom environment.

A validity investigation by Lacy, Tobin and Treagust (1984) compared 32 seventh grade students' perceptions on a locally developed instrument with information obtained from interviews. When students' written responses to the classroom environment instrument

were compared with their oral responses obtained from interviews, the concurrent validity of the instrument was supported by the similarity between written and oral responses.

Historical Perspectives on Classroom Environment Research

By an interesting coincidence, this book was written approximately two decades since Herbert Walberg and Rudolf Moos began their seminal independent programs of research which form the starting point for this volume. It was almost 20 years ago when Walberg began developing earlier versions of the widely used Learning Environment Inventory as part of the research and evaluation activities of Harvard Project Physics (see Anderson and Walberg, 1968; Walberg, 1968; Walberg and Anderson, 1968a, b). Two decades ago also marks the time when Moos began developing the first of his world-renowned social climate scales, including those for use in psychiatric hospitals (Moos and Houts, 1968) and correctional institutions (Moos, 1968), which ultimately resulted in development of the widely-known Classroom Environment Scale.

The way that the important pioneering work of Walberg and Moos on perceptions of classroom environment developed into major research programs and spawned a lot of other research is reflected in numerous comprehensive literature overviews. These include books (Moos, 1979a; Walberg, 1979), monographs (Fraser, 1981b; Fraser and Fisher, 1983a), a guest-edited journal issue (Fraser, 1980b), an annotated bibliography (Moos and Spinrad, 1984), several state-of-the-art literature reviews (Anderson and Walberg, 1974; Randhawa and Fu, 1973; Walberg, 1976; Walberg and Haertel, 1980; Fraser, 1984, 1985f; Chavez, 1984), including special purpose reviews with an emphasis on classroom environment work in science education (Fraser and Walberg, 1981), in Australia (Fraser, 1981a) and in Germany (Dreesman, 1982; Wolf, 1983). Furthermore, Dreesman (1982) notes that the work of Walberg and Moos also inspired a great part of the early research on classroom environment in West Germany, although reviews of classroom environment work published in the German language (Dreesman, 1982; Wolf, 1983) trace how the emphasis gradually shifted over time to attempts to give classroom climate a better theoretical basis and to develop new instruments specifically suited to classrooms in Germany.

Although this book focuses predominantly upon the classroom environment work which developed over the previous two decades, it is fully acknowledged that this research builds upon and has been influenced by two areas of earlier work. First, various writers (e.g., Randhawa and Fu, 1973; Anderson, 1982; Genn, 1984) recognize the influence of the momentous theoretical, conceptual and measurement foundations laid half a century ago by pioneers like Lewin and Murray and their followers. Second, Chavez (1984) observes that research involving assessments of perceptions of classroom environment epitomized in the work of Walberg and Moos also was influenced by prior work involving low inference, direct observational methods of measuring classroom climate.

One fruitful way to think about classroom life is in terms of Lewin's (1935, 1936) early but seminal work on field theory. Lewin's contribution was to recognize that both the environment and its interaction with personal characteristics of the individual are potent determinants of human behaviour. The familiar Lewinian formula, $B=f(P,E)$, was first enunciated largely for didactic reasons to stress the need for new research strategies in which behaviour is considered a function of the person and the environment (Stern, 1964). Murray (1938) was the first worker to follow Lewin's approach by proposing a needs-press model which allows the analogous representation of person and environment in common terms. Personal needs refer to motivational personality characteristics representing tendencies to move in the direction of certain goals, while environmental press provides an external situational counterpart which supports or frustrates the expression of internalized personality needs.

Needs-press theory has been popularized and elucidated in Pace and Stern's (1958) prize-winning and widely cited article and in Stern's (1970) comprehensive book. In particular, drawing on Murray's work, Stern (1970) formulated a theory of person-environment congruence in which complimentary combinations of personal needs and environmental press enhance student outcomes. Getzels and Thelen's (1960) model for the class as a social system holds that, in school classes, personality needs, role expectations and classroom climate interact to predict group behaviour including learning outcomes.

Other more recent models of the factors influencing learning involve similar construct domains of predictor variables and therefore reflect the influence of the earlier work of Lewin and Murray.