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AN INVESTIGATION OF THE PROBLEMS  
OF IDENTIFYING AND ANALYSING AFFECTIVE  
INTERACTION IN AN OPEN PLAN CLASSROOM.

A thesis presented in partial fulfilment  
of the requirements for the degree of  
Masterate of Arts in Education at Massey  
University.

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1974

### ABSTRACT OF THESIS

The investigation was part of a wider research into an Open Plan infant complex. Of central concern to this thesis was "The Problem of defining, locating and analysing 'Affect' in the Open Plan".

Six randomly selected subjects were tape recorded on six randomly selected mornings for approximately three hours each. The tapes and subsequent transcripts provided the data for the study. The affect was deemed to be located in the wider context of the general interaction of the social milieu under analysis. This wider dimension of total environmental interaction was specified according to (a) the participants (b) the task they engaged in; and 16 categories were defined. Affective behaviour was finally analysed on the basis of approving and disapproving actions of teachers. This analysis studied affect according to (a) direction of affect i.e. positive or negative, approving or disapproving and (b) method of communication of affect i.e. verbal, non-verbal, neutral or combinations of these.

The methodology was not fully conceptualized at the beginning but evolved from the literature and from experimentation, as the problem developed. When an accepted methodology was formulated the trends that the analysis would probably indicate were presented as "General Tendencies".

The general interaction segments were identified, timed and numbered in terms of the defined categories. The affective incidents were located as units of affect within a defined sequence of general interaction.

Results confirmed previously stated beliefs that some classrooms are basically stable social environments in that there was little variation in the patterns of general interaction. The proportion of time allocated to (a) participants (b) tasks was basically the same over the six days analysed. The most prevalent behaviours located were those associated with Task Instructional, with the difference between Task Organization, Task Experiential and Non-Task being insignificant. The role of the teacher was central in this study. More approval than disapproval was identified with minimal variation in the tapes as to the affect dispensed.

The research directed attention at the importance of non-verbal cues in an analysis of the social dynamics of the classroom. Teaching, as an increasingly interactive phenomenon will need to recognize the significance of non-verbal communication and this implies a necessary emphasis that should be given to education courses to ensure a full understanding of classroom interaction.

This thesis has been unencumbered for the most part by an explicitly enunciated overall plan. It is more evolutionary and descriptive than precise and prescriptive. The programme that evolved was rather that of unrestricted freedom that non-theoretical liberty allows. This is consistent with the author's view that true discovery is likely to lie somewhere along the roads of interest. For a considerable number of years the author has had a deep professional and personal interest in the analysis of classroom interaction. Teacher-pupil interaction seems such a significant aspect of teaching that it could well be presumed that to study interaction in the educative setting is synonymous with the study of teaching.

Tracing the impulses that lead to research is often a difficult if not impossible task. Davitz<sup>1</sup> suspects that most research in the social sciences has its origins somewhere in the personal life of the researcher though these sources are rarely promulgated as being the key motivating factor. The argument could well be put forward that such personalized origins for research have limited scientific value. It could be claimed that they might even disrupt the main purposes of scientific communication. This claim would have unfortunate implications if as a result of it pseudo-theoretical rationales were considered a requirement that was necessary to give research an aura of respectability.

It is the author's contention that education is both a scientific and a humanistic enterprise and the justification for one method of analysis cannot deny the validity of another or negate the possibility that a combination of many approaches may offer the greatest opportunity for the formulating of acceptable truths about teaching.

That this thesis did not begin with a tightly structured conceptualization or an explicitly formulated theoretical view is not considered a disadvantage. What was considered of value was the opportunity to work in close conjunction with other researchers in an area of deep personal interest. This interest was centred upon an investigation into the teaching of children in an Open Space situation at a time when this type of educational organization was truly innovative in the New Zealand educational system.

When the possibility emerged of an opportunity to view this complex interactive educational environment according to the definition, the location and the distribution of affective interaction then the general interest of the author became specific and challenging enough to provide the impetus required for the work which follows.

I wish to acknowledge the patience, devotion and loving support accorded this thesis by Maxine, Pete, Andy, Shelley and Little Cherie.

I am equally indebted to Professor Adams for persuading me to begin this thesis, and to Professor Hill, for providing the impetus to complete it. Their encouragement and tolerance has been both scholarly and gentlemanly.

## TABLE OF CONTENTS

	<u>Pages</u>
Prologue and Acknowledgements	I - II
Table of Contents	III
Introduction	IV - VI
Chapter One.           The Concept of Affective Interaction.	1 - 8
Chapter Two.           The Importance of the Non-Verbal channel in Affective Interaction	9 - 16
Chapter Three.        Methodology for the Analysis of Total Interaction.	17 - 22
Chapter Four.         The Analysis of Affective Interaction.	23 - 27
Chapter Five.         Supplementary Considerations.	28 - 34
Chapter Six.          Discussion of Results.	35 - 42
Epilogue	43 - 45
Appendicies	46 - 67
Bibliography	68 - 72

### INTRODUCTION

This investigation into "the Problems associated with the identification and analysis of affective behaviour in an Open Plan" was an outcome of an investigation undertaken by Professor Adams of Massey University into specified aspects of the Open Plan infant room.

The research initiated by Professor Adams was based on the assumption that "teachers will be better able to modify their actions in accordance with the needs of the innovation (i.e. Open Plan Teaching) if useful and relevant information could be provided for them". With this in mind a series of observational studies of the Open Plan situation, in action, was planned in such a way that the research would result in information which could be made available to the teachers as reliable evidence as to what was actually taking place.

As a consequence of this information, teachers would be able to evaluate their actions and make appropriate changes where they were deemed to be consistent with the curriculum design for the Open Plan.

The research was designed according to three differing phases. They were:

- Phase I      Individual pupil activity
- Phase II     Pupil group activity
- Phase III    Individual Teacher Activity

It is from Phase I that the material was gathered which matched the interest of the author in such a way that a thesis was initiated.

Professor Adams in his research proposal, contended that two aspects of the pupils' life-space were relevant

- i)      The verbal environment to which the pupil is exposed
  - because it can provide one indication of the intellectual demands being made
- ii)     The activity in which he becomes involved
  - because in conjunction with (i) this has significant educational relevance

Initially it was proposed to take day-long observational records of a randomly selected number of pupils (8-10) on a number of randomly selected days. The verbal environment was to be taped by having the selected children wear radio-microphones with the resultant transmission being recorded on a master tape.

Due to conditions beyond the control of the investigating team, minor modifications were made to the extent of data collection. Six tape-recordings of six randomly selected children (four boys, two girls) were taped on six randomly selected days. Because of gross variations in the afternoon programme the length of each tape was limited to the morning so that approximately eighteen hours of tape recordings were available for processing. At the same time as the tapes were being made, activity observations were made of the selected pupil by non-participant human observers.

The author worked with the research team on four of the six tapes and transcribed two of the six tapes into a continuous verbal record of all the recognizable verbal content identified on the recordings. The quality of the actual tape recordings was variable as the sensitive microphones being used, distorted sounds at times when the children were working in areas with shiny, reflective surfaces.

There was not a high proportion of the verbal communication on the tape recordings that could not be identified. The main concern to the transcribers was undoubtedly the ease with which the identification of the verbal message was effected.

As a consequence of close association with the collection of data from the investigation, it became apparent that contained within the data was a veritable fund of information that reflected accurately, naturally-descriptive segments in the life space of children involved actively in Open Space education. In the act of transcribing tapes over long wearisome hours, the author intuitively became aware that "how a teacher said something" appeared at least as significant as "what was being said", yet as a result of transcription the manner in which the verbal message was carried was lost. This relationship of what was conveyed verbally to the manner in which it was being conveyed indicated other than cognitive criteria. It seemed to be more related to such general criteria as the interpersonal relationships, the rewarding or sanctioning of behaviour, the regard that the teacher had for children, and the affect displayed by the pupils for the teacher.

This concern led to the conceptualization of the topic for the thesis which was formulated as being

"The problem of identifying and analysing affective interaction in the



Open Plan teaching situation".

It appeared that this could be an area of fruitful endeavour although it was also clear that the successful resolution of the problem in an appropriately academic manner would be contingent upon the resolution of critical problems of definition and instrumentation which must inevitably occur.

That the path might be thorny and the end uncertain was considered inconsequential and certainly no deterrent. What was considered important was the belief that education as a process implies that not all the rewards must come at the end of an enterprise, that the growth, the awareness and the opportunity to meet and attempt to solve problems is an equally important aspect of education.

## CHAPTER 1. THE CONCEPT OF AFFECTIVE INTERACTION

Having the problem defined was a moment of some relief although this was short lived for the difficulties of definition became immediately apparent as soon as the research of the literature relevant to this aspect of the analysis was initiated.

### The Significance of Interaction.

The term "interaction" has been used by social scientists to refer to the act of communication between or among people. When people interact a two-way process is involved. This is basic to all concepts of interaction. For example a teacher may initiate an interactive exchange in the classroom by asking a question but it cannot be assumed that interaction has taken place until the sender of the communication receives some indication from the recipient. Thus the initiation of communication is part of the two-way process which needs an observable or identifiable signal to be returned. Homans<sup>2</sup> a prominent sociologist, synthesizes the concept of interaction in the following terms:

"When we refer to the fact that some unit of activity of one man follows or, if we like the word better, is stimulated by some unit of activity of another, aside from any question of what the units may be, then we are referring to Interaction"†

The importance of interaction in the educational setting of the school has been increasingly acknowledged, as evidenced by the number and variety of instruments that have been developed to analyse interaction and the increased number of educationists concerned with researching the interaction patterns of the classroom.

In the classroom a great deal of verbal communication takes place and if the definition of interaction is applied to all the reciprocal communications of the classroom then it becomes immediately apparent that during an average day a teacher may engage in between two and three thousand interactions. (Hudgins<sup>3</sup>). On a numerical basis it is obvious that a great many interactions take place and when this quantity is related to the differing types of interaction that can be instanced, then interactively-speaking, the classroom is obviously a very complex place.

The classroom teacher whether he operates in a single classroom with a group of children or in an Open Plan in conjunction with other teachers accepts as part of his role the overall responsibility for the children placed under his care. As a professionally educated person he is concerned with aspects of the cognitive, social, physical and emotional development of each child. Much of the desirable learning that the teacher intends to take place will be

†Homans 1950 P. 36 Op Cit 2.

initiated in the interactive situation where the mind of the child (or children) is stimulated to action by the spoken word. The teacher in his role as the authority figure in the classroom (Johnson <sup>4</sup>) can legitimately expect that what he says and does will have a significant impact upon the children with whom he is concerned. As Gorman <sup>5</sup> suggests the possibility always exists that whatever a teacher says or does is right because it comes from the teacher.

That teaching is an interactive activity seems evident. That there are differing types of interaction is highly possible and that the teacher is a central figure in the interaction patterns of the classroom is equally obvious. But what of affective interaction? What is its particular significance to the classroom? Affective Interaction.

Research into classroom interaction analysis has as yet been unable to identify significant indications of emotional or affective behaviour within the context of the classroom. Flanders <sup>6</sup> contends that the classroom is an "affectional desert". Adams & Biddle <sup>7</sup> located affect in the sociation category which attracted minimal recognizable examples, i.e. about half of one percent of the total behaviour. Evans <sup>8</sup> found that affectivity averaged at 1.38% of the total teaching behaviours of seven biology teachers (Affectivity in Evans study was defined as being those behaviours that are intended to elicit and reinforce, positively and negatively, contributions to the teaching-learning process by an individual or group of students). This lack of behaviours identifiable as affective or emotive could well be due to other reasons than that such behaviours seldom exist. Parsons <sup>9</sup> in a theoretical conceptualization for characterizing the interdependence of people in groups, suggested a general criterion of affectivity - non affectivity was present in all interpersonal relationships. Schmuck and Schmuck <sup>10</sup> state that in some classes expression of feelings by students are welcomed and supported but in many others students are encouraged to keep feelings of happiness or displeasure to themselves. Schutz <sup>11</sup> using a different theoretical framework compared compatibility for persons in terms of their needs for (a) inclusion, (b) control, (c) attention. Compatibility of classrooms could be gauged by assessing whether or not each one of these needs is expressed in sufficient amounts to satisfy students' requirements. Classes are cited as having emotional support problems if too little warmth and love is expressed.

Emphasis in education is being directed towards a more interpersonal approach where interaction, i.e. two-way communication, is seen as a necessary component in the educative process. Many of the current innovations in educational organization (such as team teaching or Open Plan teaching) or in methodology (discovery learning, activity methods and integrated programmes) involve the teacher and the child in a more interactive-type situation where

frequent communication between child/teacher, child/child, teacher/child is an accepted feature of the new emphases.

The general conceptualization of children wanting to learn in a warm supportive classroom environment would find acceptance as a currently appropriate educational expectation. It is highly probable that teachers will be expected to dispense more positive affect to support a generally affective classroom climate and to develop appropriate attitudes to learning on the part of the children. Teacher reward is seen as a necessary condition of the modern learning situation. Christensen<sup>12</sup> supported the contention that the affective response of the teacher was more important for growth in achievement than teacher permissiveness. Hughes<sup>13</sup> developed a comprehensive set of categories with which to classify teacher behaviour and as a result was able to list seven behaviour categories of optimum interaction functioning of teachers for desirable learning conditions in the elementary school. A 10-20% range was listed as being desirable for positive affectivity, whilst a 3-10% range was given as the optimum range for negative affectivity. This upper limit of 30% of affective interaction, or 13% at the lower level, far exceeds the proportion that has thus far been identified in empirical studies listed previously (Flanders, Adams, Evans).

One of the very real problems in the research of affective behaviour in classrooms is that as yet affectivity has been virtually neglected as an area worthy of study in its own right. Too often assessments of affectivity have been as a consequence of analysing the total classroom situation or it has been studied as a "less" significant feature in association with variables such as cognitive growth and student achievement. Bion<sup>14</sup> and Thelen<sup>15</sup> stress however that the affective aspect of all interpersonal communication is unavoidable. Interaction for them, must always be located at some level of feeling. Emotionality and affective interpersonal ties are inevitable consequences of human interaction. And one could hypothesize that the more regular a group meets and the more personally familiar they become, the greater the level of affectivity exchanged.

That affective behaviour is behaviour that is evident in interactive classrooms seems unarguable. That it is not easy to define and identify also seems apparent. These difficulties however do not preclude the assumption that a large number of pupils operating in a social environment that includes a number of teachers in a complex set of communication networks must inevitably result in some degree of affective interaction. Not only should the affective interaction be a more significant aspect of total classroom behaviour than has previously been established but current trends in developing a warm, supportive classroom environment should lead to the conclusion that more positive affect than negative affect should be evidenced.

Flexibility in grouping, which is claimed as one of the significant advantages of Open Space teaching, tends to allow for greater choice on the part of each individual and is claimed to be encouraging in that it develops attitudes leading towards success in the learning situation. Ostensibly the child progresses at a rate which is challenging yet not frustrating. Warwick 16 claims that Open Space teaching reasserts the importance of people and their relationships or reactions to one another.

But what is this affectivity, this emotional aspect, this feeling that seems an inevitable characteristic of human encounters? Affect - an educationally justifiable concept?

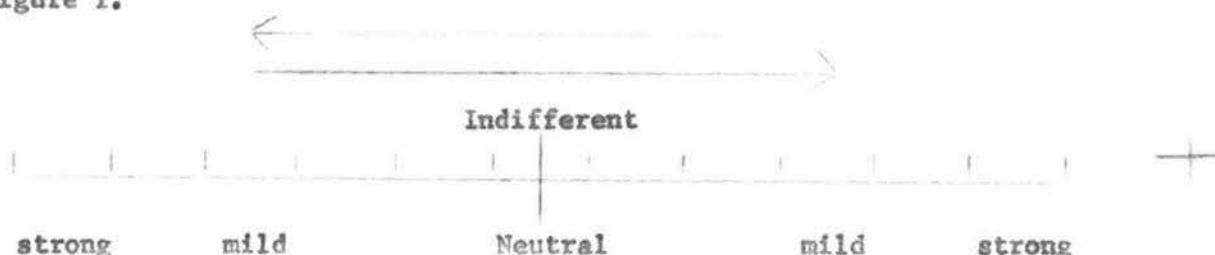
It is virtually impossible to give a definition of emotion or affect which all psychologists, psychiatrists, educationists or social scientists agree upon. The difficulty in defining a concept such as emotion is that, like teaching, emotion is an exceedingly complex phenomenon that has been studied, observed and analysed from various schema depending upon the interests of those concerned. Jaspers <sup>17</sup> states that "as for emotion it is often uncertain what is meant by it in a given case". Rapaport <sup>18</sup> says, "There has been an indiscriminate application of the words emotion and affect and feeling and their adjectival forms to almost everything that is not apparently rational or lawful".

Virtually every attempt to classify emotion leads to a differentiation of the various attitudes of an individual to his social environment. Anger, surprise, fear, disgust, contempt and joy as a few examples are characteristic attitudes of an individual to other people or to social situations. Affect may be initially a state of mind but for the concept to be an appropriate interactive phenomenon it needs to be directed towards someone or something. If considered a reaction to conditions of the environment an emotion must be considered more social than biological. For this reason the kind and form of such emotional attitudes needs to satisfy certain social norms and the affect or emotion displayed in the classroom will not be prescribed by generalized ideas on emotions but will emanate specifically from the norms that distinguish the classroom as a special sort of social setting.

Arnold <sup>19</sup> stated that emotional behaviour follows the intuitive appraisal of a situation. She defined emotion as a tendency to move towards anything appraised as good (beneficial) or away from anything appraised as bad (harmful). This definition has one distinct advantage for this study in that it links the concept of emotion to the hedonistic continuum which extends from extremes of negative affectivity such as loathing and hatred to the extremes of positive affectivity such as delight or love. See Figure 1.



Figure 1.



Different intensities of affective arousal are represented by arbitrary units marked off on the continuum. Midway between negative and positive affectivity is a range of indifferent or neutrally affective states and gradations define degrees of emotional intensity.

It was hypothesized that this method of conceptualization would be of direct benefit in the analysis of affect because once the affect had been identified as far as type was concerned, the location of it upon a continuum would allow for intensity of emotion to be assessed. This would have allowed for a classification system to be constructed which analysed the three important aspects of affective behaviour. These are:

- (a) Sign - the type of emotion. This categorization was initially thought of with reference to an established system of identification such as those of Tomkins<sup>20</sup>, Woodworth<sup>21</sup>, Schlosberg<sup>22</sup> or Osgood<sup>23</sup>.
- (b) Duration - which would have been assessed according to a unit of time (Seconds).
- (c) Intensity - the strength of the emotion according to the placement of the emotion on the continuum.

In the formulation of a method of analysis it became apparent that the range of affective interaction in no way reflected those present in the systems previously indicated. The conviction that affective interaction was present in the interactions recorded on the tapes was strongly held but the type and intensity of emotion did not readily fit those categories established in the psychological systems conceived to assess emotion.

At this point there ensued a retracing of the ground that had already been covered in the search for a definition of interaction. Attention was redirected back to the literature concerning systems of classroom interaction analysis to see if there were any appropriate indicators of affective behaviour that would match the limitations imposed by the apparent lack of the psychological concept of emotion and by the restriction placed upon the analysis by the fact that the only available data were the transcripts and the tape recordings.

Soar<sup>24</sup> indicated that observation of the affectivity of cues given by teachers can be profitably pursued. He suggested that a specific dimension of

these cues: the affective-hostility dimension may be regarded as having very substantial potential as a criterion in the assessment of teacher performance. His was an adaptation of the Fowler Hostility-Affection schedule (Smith 25) in which eight categories were developed each of which elaborated specific activities such as "teases" "frowns" "smiles" "praises". This system that has had some documented veracity looked promising but had the unfortunate requirement of a visual image. Although the original intention was to utilize the video transcripts which were made as Phase II and Phase III of the research a detailed analysis of video recordings revealed that the visual recordings were insufficient in terms of detailed focus to allow for the visual discrimination to be utilized. There was also the problem of comparing the verbal message of the microphone with a video message taken at another point in time.

An analysis of systems of analysing interaction from MIRRORS OF BEHAVIOUR 26 indicated a wide divergence of systems according to the needs of the research and the theoretical conceptualization of the authors. Most category systems included some generalized measure of Teacher Approval and Disapproval. From a surprising number of research analyses of these teachers-affective responses to students have some predictions of subsequent pupils' cognitive outputs such as achievement in subject matter and rise in intelligence scores. As quoted in MIRRORS OF BEHAVIOUR, "it is surprising enough when a variable in education actually predicts something but even more surprising to find that how teachers say what they say appears to be a better predictor of change in pupils' behaviour than anything else educational research has turned up to date".

Teacher approval or disapproval as a predictor of cognitive growth seems logically linked with the idea that these affective measures are concerned with the reinforcement a pupil receives for the responses that he has made. How a teacher reacts to a pupil's response is equivalent verbal mediation of positive or negative reinforcement. If a student's idea is acceptable to the teacher and this acceptance is transmitted in some communication channel, then positive reinforcement could be presumed to have taken place. If a teacher responds negatively with a frown or a change in tone of verbal cue or a negation, then the student will receive a negative reinforcement. Thus from such analysis, which matches by and large typical classroom behaviour, it can be seen that the reinforcing of students' cognitions can be effected via affective channels.

However, a teacher is concerned with other than cognitive behaviour and in his organizational, managerial, social and emotional roles, a teacher is also involved in dispensing approval and disapproval. Teachers are people who have feelings and in communicating with children it is highly probable that these feelings will be obvious. Each statement transmitted could be considered to involve two channels, an information or content channel and an affective channel. Lail 27 states that if teachers are to become more effective in the classroom

they need to become attentive not only to what they are communicating but to how they are communicating it. In a sufficiently threatening or ambiguous environment it appears that the affective portion of the message can so negatively bias the climate that the content aspect ceases to be of any significance.

The importance of affective behaviour in the classroom has not received full acknowledgement. As a form of behaviour it can be considered affective if the main focus is on the emotional aspect of communication. That is, if the behaviour takes into account some measure of the expression of feeling. Indications are that this class of behaviour cannot be coded finitely from a written script because very often the affective aspect of communication is carried by the tone of the voice, by the facial expression, by gesture or by other types of non-verbal behaviour.

Biddle<sup>28</sup> stated that greatest emphasis in any classification system should be given to objective analysis and in any category system each category should be mutually exclusive yet reasonably exhaustive of the domain of the behaviours being analysed. His suggestion was for facet analysis where variables are defined in terms of their component elements which fitted closely to give comprehensive yet total analysis. He gave as an example a design which labelled behaviours as

- i) Teacher positive verbal
- ii) Teacher negative non-verbal
- iii) Pupil positive verbal
- iv) Pupil negative non-verbal

but the obvious limitation of this was that these did not cover all the possibilities that existed between the significant sets of variables that had been specified i.e.

- a) Teacher - Pupils
- b) Positive Affect - Negative Affect
- c) Verbal - Non-Verbal

#### Summary

The review of literature relevant to the Concept of Affective Interaction raised certain problems the answers to which were not contained fully within the readings. However, more than anything, the attempt to clarify and delineate the affective behaviours indicated the area of the problem with which the author could be legitimately concerned. It had become clear that affectivity is a general term that had a host of educational implications for the manner in which children learn appropriate or inappropriate behaviours.

That every interactive communication has an affective element appears a necessary and logical condition contained within the duality of the concepts defined by affective interaction. It seemed also to be plain that the nature



of the educational environment is such that the full range of affective meaning will not be revealed in the day to day interactions that take place between teacher and pupil but will tend to be mild in degree and should, in the light of modern educational emphases, be positive in direction. The classroom appears to contain its own type of affective behaviour, which is consistent with the view that affect is a product of the social milieu in which it is located. The forces operating upon affect in the classroom would indicate that it falls more within the range of approving (positive) behaviours and disapproving (negative) or sanctioning behaviours.