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In-Service Diploma Course Evaluation using Repertory Grids

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ABSTRACT *Kelly repertory grids (Kelly, 1955), and associated computer programs (Shaw, 1980) were used to evaluate the effectiveness of the Post Experience Diploma in Literacy Development taught at Middlesex Polytechnic. Thirteen teachers participated in the study and they reported two major causes of change directly attributable to the Diploma. These were: (a) a greater knowledge, and (b) increased self-awareness. The two causes of change were closely related to the stated aims and objectives of the Diploma and they instigated many positive outcomes related to: (i) the organisation and planning of the teaching of reading, (ii) the nature of communication and interaction with colleagues, and (iii) specific child centred benefits. Fewer negative outcomes were reported but they should provide the course tutors with a feedback to re-direct their energies more profitably to overcome these problems when next teaching the Diploma. It is suggested that senior personnel in the schools provide conditions for the returning teacher which enable the potential benefits of gaining a Diploma to be maximised within the school.*

Introduction

It was decided to attempt an evaluation of the effects on teachers of attending the Post Experience Diploma in Literacy Development at Middlesex Polytechnic. Fourteen teachers were seconded full-time, for one term from April to July, when the major part of the theoretical base of the course was taught. The teachers then attended one day a week at the Polytechnic for the following two terms until March. During these two terms they attempted to put 'theory into practice', and were expected to apply and monitor the techniques and skills acquired during the first term in their own school or institution. They were required to complete and submit two projects, one in each term, based on the application of their newly gained skills. On their day per week at Middlesex Polytechnic, close supervision and tutorial time was given to the projects and further relevant theoretical ground was covered. Tutors also visited the teachers at their schools to discuss and give advice on their projects.

Doyle & Crichton (1978) have questioned the quality of human perception as captured by rating scales. Therefore, it was decided not to use a questionnaire or a rating scale to evaluate the Diploma, but to seek a more reflective and sensitive instrument. Questionnaires necessarily force subjects to use criteria which have been selected by 'experts' and, as such, they may be alien to the subject's own meaning systems. The use of the repertory grid (Kelly, 1955) would, it was felt, circumvent this problem, as it had done in a previous study (Kevill & Shaw, 1980) which evaluated the communication interactions of teaching staff and students at the Polytechnic. The writers were uninterested in the 'consumerism' approach of many American educational institutions which seeks the immediate responses of students to the specific elements of the course they have just been taught. Rather we were keen to explore the influence of the Diploma course on the teachers' everyday school lives. An essential tenet of 'Personal Construct Theory' developed by Kelly is that the individual can personally interpret or construe his world in a scientific manner. That is, each human being can be considered as a scientist who formulates theories, tests them by experiment, then reviews and revises those theories in order to act more effectively in the world. Personal construct theory is reflective in that the subject is free to reflect upon his own chosen elements; in this study they were to be the elements of his teaching situation.

Each teacher was required to construe his teaching situation on two separate occasions. A search of the literature had failed to reveal a study using this methodology in which it was hoped to capture changes in the repertory grids which took place over time and which specified the Diploma course as being their cause. This would provide an evaluation feedback to the Director of Studies and the teachers of the course. And for the participants, there would be a detailed feedback of the analysis of the changes in their grids, enabling them to grow in understanding of the way events had altered their perceptions of their day to day working lives. Also, the outcomes or changes attributed to the course might be relevant instigations for pedagogic or planning changes for the Director and teachers of the Diploma.

Finally, it was hoped that using this non-threatening, wholly reflective method with practising teachers, it would be possible to assess if the teaching of the course had embodied its stated aims.

The aims of the Diploma in Literacy Development as written up in the Polytechnic course development submission document are: to enable a course member to:

(i) Understand the relationship between language and learning and to study the receptive, generative and productive aspects of language;
(ii) Evaluate recent research in the literacy area and consider its implications for education;
(iii) Consider classroom organisation and practice in relation to the management and development of literacy skills;
(iv) Study the means of measuring and recording progress in the attainment of literacy skills with special reference to the reasons for children's difficulties and the remedial techniques available at the present state of research knowledge.

More detailed objectives appear as a preface to each of the three terms' outline of course content.

Method

Subjects

Thirteen teachers completed the two grids. They were all experienced teachers, representing infant (5–7 years), junior (7–11 years) and secondary (11–18 years) levels of teaching, as well as an infant head teacher and a teacher at an adult literacy centre.

Procedure

Having briefly outlined the theoretical ideas underlying repertory grids, the first grid was elicited from each of the thirteen subjects in the same session. The subjects were asked to identify all the elements which regularly made up their day to day teaching job. Each wrote his or her own list and when satisfied that the list fully covered the range of experiences at work, they copied the named elements on to separate cards labelled A, B, C . . . etc. The lists varied considerably because the subjects occupied different posts in the schools. Examples of the different elements generated by an infant headteacher, a secondary and a primary teacher are shown in Fig. 1. The constructs were then elicited in the usual way by offering the subjects a randomly derived list of triads (Bannister & Mair, 1968). The subjects were asked to order the elements on a construct scale of 1 . . . 5 and to record their allotted values. All were advised to delete elements, which were not sufficiently independent to be maintained.

Also, if new elements came to mind to put them on separate cards so that they could be included and given values on the grid at the end of grid elicitation. (No elements were discarded, but several were added.) The subjects were also told to use any construct that the triads were failing to elicit.

Since changes in teachers' perceptions due to the influence of the Diploma course were the primary interest of the study, no data were gathered of the viewpoints prior to starting the course.

The first grids were elicited when the subjects had been away from the school for

(a) *Elements of a secondary teacher*
Teaching
Requisition
Testing and time-tables
Liaising with staff
Discipline
Visits
Preparing school leavers
Form teacher

(b) *Elements of a primary school teacher*
Teaching
Organising library
Socialising
Discussing
Duties
NUT representative
Out of class activities
Relations with parents

(c) *Elements of a primary headteacher*
Relationships with children
Overseeing daily running of school
Administration
Taking assemblies
Talking with parents
Dinner duties
Liaison with officials
Relations and work with caretaker
Curriculum planning
Teaching
Maintaining staff relationships
Attending meetings
Keeping control (discipline)
Socialising with staff

FIG. 1. List of elements generated by three subjects.

a term and had completed the major theoretical study period at the Polytechnic. Having been back at their jobs for two terms a copy of the first grid, without the original scores, was presented to the subjects in the third week before the end of the Diploma course. The subjects were reminded of the methodology of grid completion and they were asked to complete their grids again. They were instructed to add any elements or constructs which they now felt should be included. No additions were made.

Structural Analysis

The first grids elicited were FOCUSed (Shaw, 1980), and each subject received a feedback of the analysis of his grid. Each subject was allocated 45 minutes for the feedback. FOCUS is essentially a two-way cluster analysis which re-orders systematically the rows of constructs and columns of elements to produce a FOCUSed grid showing the least variation between adjacent constructs and adjacent elements (for full details see Shaw, 1980). The feedback enabled the teachers to become aware of relationships in their construing and to gain insights concerning their feelings about their teaching posts, having been on leave studying at the Polytechnic for one term. The relationships in construing are highlighted in a simple tree diagram format, an example of which is given in Fig. 2.

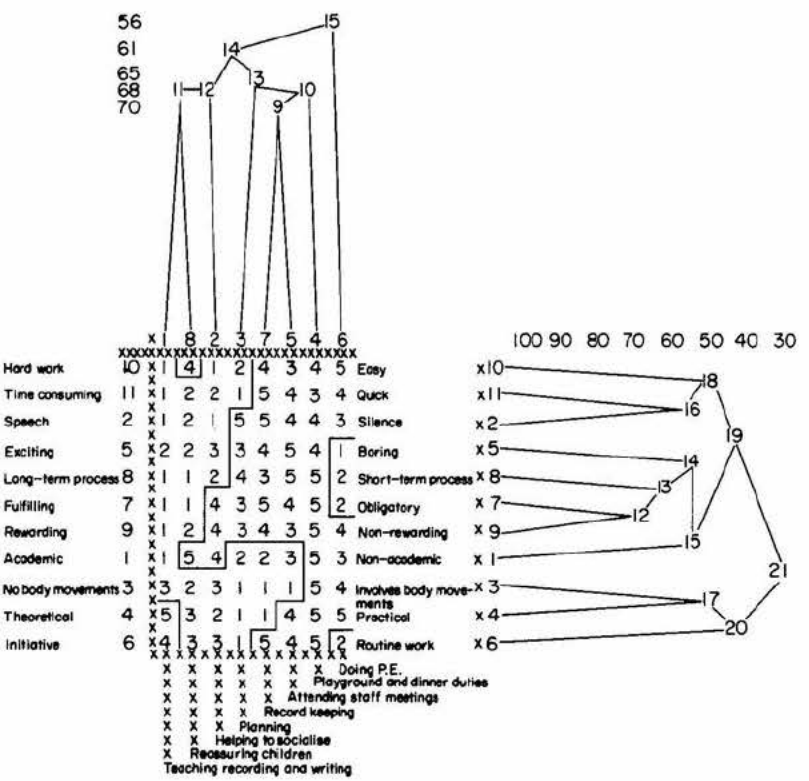

FIG. 2. Focused first grid on subject 2.

Immediately prior to the end of the course, the thirteen pairs of grids were analysed using the CORE computer program (Shaw, 1980).

This analysis can be used when assessing changes in construing between two grids having the same element and construct names. In this case the two grids were completed by the same person with an interval of two terms between each elicitation.

The CORE analysis compares all equivalent constructs (1 with 1, 2 with 2, . . .) and records the level of match of each pair. If a construct is being used in exactly the same way on each occasion, this match will be 100%. The option is then given to remove the construct which has changed the most and is therefore contributing the most deviation between the grids. The process is then repeated by matching all equivalent elements, using the reduced grids and again an option is given to delete the element causing the greatest difference.

If this process is repeated until all elements and constructs are matched at 100% then one *core grid* which consists of the unchanged parts of the two original grids will remain. Alternatively, the option to stop deleting elements and/or constructs at any intermediate stage can be exercised.

Feedback of CORE, Structural Analysis

For each subject the iterated similarities between constructs and elements on their paired grids was written out from the computer printout, for example:

		Percentage similarity between
Constructs		1st and 2nd grid of Subject 2
Construct 7	dominance-passivity	43% similarity
Construct 4	demanding-undemanding	57% ,, etc.
Elements		
Element 8	Courses	59% ,, etc.

A copy was available to guide the feedback session between the experimenter and the student and another for the student to take home. The reasons for changes on each construct for each element were then discussed with the student looking at a copy of his first and second grid scores (see Fig. 3). This was then followed by a discussion of the reasons for the changes along the elements listed by the analysis. The experimenter noted the responses of each subject. One and a half hours were allotted for each session and this proved to be adequate. It was decided not to use a tape recorder as the teachers had changes in 'sensitive' areas of their teaching lives, and while strict confidentiality was assured, the use of a tape-recorder might have inhibited responses.

It was necessary to ensure that the experimenter had truly captured the subjects' reflections of the changes on their grids. A copy of their two grid scores (as in Fig. 3) was given to them, together with the full list of iterated similarities (exemplified on previous page) and they were asked to return their own personal written account of the changes on the constructs and the elements.

	Rated I	My class	My post (audio visual aids)	Staff contact	Parent contact	Staff meetings	Duties	Administration	Courses	9	10	11	Rated 5	
		1	2	3	4	5	6	7	8	9	10	11		
1	Essential	1/1	3/3	2/2	2/2	3/3	5/4	4/4	4/4	← first rating / ← second rating			Inessential	1
2	Personal	2/2	4/4	2/1	1/2	3/4	4/3	5/5	5/4				Practical	2
3	Professional	3/3	2/2	5/4	3/2	1/1	2/2	1/1	4/2				Social	3
4	Demanding	1/2	3/3	4/4	2/3	5/3	3/2	4/3	5/3				Undemanding	4
5	Rewarding	2/3	1/2	3/3	2/3	5/4	4/4	4/4	5/2				Unrewarding	5
6	Interesting	2/2	1/2	2/2	3/3	5/4	5/4	4/4	4/3				Boring	6
7	Dominance	2/2	2/3	4/4	3/3	3/5	4/2	5/1	5/5				Passivity	7
8	Creative	2/2	3/3	2/2	1/2	4/4	5/4	4/4	3/3				Mechanical	8
9	Tiring	1/2	4/4	5/4	2/3	4/3	3/2	3/3	5/2				Untiring	9
10	Satisfying	2/3	2/1	1/2	3/2	4/4	3/4	4/3	5/2				Frustrating	10

FIG. 3. Scores of 1st and 2nd grids of a primary schoolteacher.

Although this meant 'going over old ground', the experimenter sought each subject's cooperation before parting that a check of the truthfulness on the account taken down during the feedback sessions be provided. All except two did this very promptly, i.e. within two days of the feedback and the two slower ones eventually returned their accounts in two weeks. It was noted that the latter two accounts were inclined to describe the changes and to forget ascribing any cause to the changes.

Example: subject II

Construct 10	advisory ..... non-advisory
Element 5	discipline

Subject II scored discipline as 2 on construct 10 on first grid and as 5 on second grid.

Experimenter's account: 'More concerned to get self discipline rather than imposed discipline. Course has given me confidence to understand how one can get the best out of children from within themselves and get the best out of them without fear of everything going into a riot. Less fear of losing control. Can use childrens' talk to best advantage without worrying it's a loss of control.'

Subject II's account: 'discipline: attitude change due to influence of course'.

All personal accounts that were done promptly were very close in fact and in spirit to the account taken down during the feedback. It was, therefore, felt to be justifiable to use the experimenter's more comprehensive material than the accounts of these two subjects.

Analysis of Changes on the Grids Attributed to the Diploma Course

The changes on each pair of grids for each subject were studied by getting into the 'thinking of the grids', using the experimenter's own and the subject's account of the changes. All references to changes which were unrelated to the Diploma course were ignored and only those ascribed to the course were selected. A full account of the relevant changes and of their causes was written out. At the end of this process a summary of the major cause(s) of change for each subject was written, as well as the outcomes as a result of the causative factor(s). Finally a diagram epitomizing cause(s) and consequent outcomes was produced for each subject. An example is given in Fig. 4. As such a process could be open to subjectivity two of the nine grids were randomly selected by a colleague to be independently summarised, He was familiar with the CORE analysis technique and he returned the grids with the comment that the experimenter's account fully and accurately captured the cause(s) and outcomes of change.

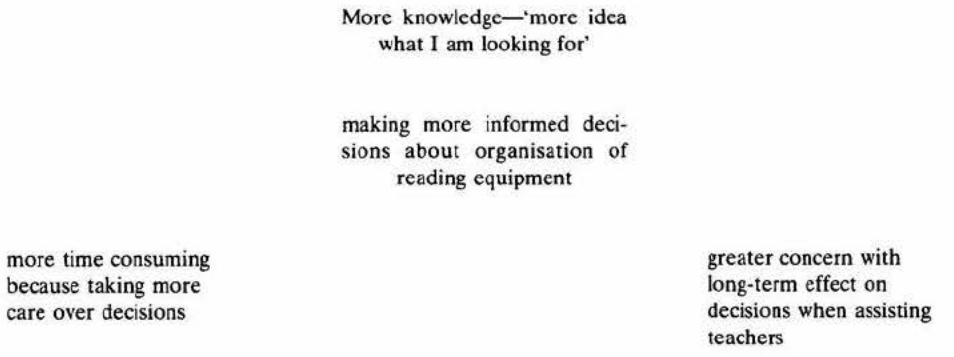

FIG. 4. Cause and effects of subject 8.

Results

Four of the thirteen pairs of grids had no changes attributable to the Diploma course. They will be discussed presently.

The remaining nine pairs of grids gave two major causes of change in the summary diagrams (e.g. see Figs 5 and 6). These were:

(1) Greater knowledge, sounder theoretical base, more ideas (Fig, 5)
(2) Enhanced self-awareness and greater objectivity (Fig. 6).

(1) *Greater Knowledge, Sounder Theoretical Base, More Ideas*

Twenty-eight different effects or outcomes arose from this cause. Several grids had mentioned the same outcome. The twenty-eight were typed on to separate numbered cards. The above cause of change was also typed on a separate card. Three mentioned the two causes of change and six grids one only of the two causes. The greatest number of separate effects on a grid was seven and the smallest two.

Positive effects/outcomes for organisation and planning

(1) Looking more deeply at curriculum planning
(2) More day to day planning for individual needs
(3) Better at selecting what materials and equipment to order
(4) Better able to organise facilities and materials
(5) Making more informal decisions about organisation of reading equipment
(6) Able to make records and reports more relevant to teaching situation
(7) More fully aware of importance of record keeping and reports
(8) Intent upon implementing a 'reading policy'. Putting theory into practice
(9) Greater confidence in administering reading tests
(10) More related activities used rather than just hearing them read

Improved communications: consultation and discussion with parents and colleagues

(sub-set of organisation and planning)

(11) Curriculum planning will be more tiring, stressful and demanding, but more likeable and interesting because of wide consultation with all groups concerned rather than doing it alone
(12) Will consult with all groups involved in planning curriculum. No longer viewed as a chore to be done alone
(13) Greater concern with long-term effects of decisions when assisting teachers
(14) Instituted more formal meetings with colleagues to discuss what changes to prescribe for children of withdrawal unit
(15) More prepared to discuss facts during informal meetings with parents or staff

Greater knowledge and more ideas. Sounder theoretical base.

Positive child centred changes

(1) Enhancement of form tutor role — implementation of new skills during form tutor periods
(2) More personal confidence to let children get on with it alone. No fear of loss of control
(3) More time put into socialisation of children because of its relationship to academic success
(4) Observing children's excited response as I put theory into practice
(5) Keen to promote child-centred discipline rather than teacher-imposed discipline
(6) Greater tolerance and understanding of indiscipline

Negative or ambivalent outcomes

(1) Uncertainty of what changes to prescribe for children of withdrawal (remedial) unit:
(a) When about to return to normal classes,
(b) Which are best classes to withdraw them from
(2) Confusion about which of the many ideas to implement and how to implement them in own teaching
(3) Frustration at inability to communicate new knowledge to colleagues
(4) Feelings of pressure due to work load of attending course, doing job and family pressures
(5) More time consuming because taking more care over decisions about organisation or reading equipment
(6) Less pleasure at doing duties at school — no time to relax
(7) Resenting spending time on less relevant activities (e.g. display), than improving children's reading

FIG. 5. The effects of increased knowledge and sounder theory in school's situation.

Five practising teachers unrelated in any way with the Diploma course were randomly selected and asked if they would 'sort' the twenty-eight cards around the central card with the first cause typed on it, i.e. greater knowledge etc. They were one secondary, two infant and two junior teachers reflecting the proportions of these teachers on the Diploma. Having sorted them into what they personally

considered were coherent clusters, they were asked to record the number on each card in the cluster and to give a title to each cluster. The five records were then compared and the shared groupings can be seen in Fig. 5.

(2) *Enhanced Self-Awareness and Greater Objectivity*

As only three subjects mentioned this cause of change and there were only eight specific positive outcomes related to it, no 'sorting' into groups was carried out (see Fig. 6). The changes on the left in Fig. 6 were all mentioned in the feedback from an infant headteacher. There is no order of significance in the way they are listed and it is left to the reader to group them if desired.

(1) Greater awareness of complexities of relationships	
(2) Overseeing daily running of school was seen as private, personal decision-making task. Now all actions seen as having an effect on all staff	
(3) More aware of long-term relationships with children	Enhances self-awareness and greater objectivity
(4) All actions seen as affecting all staff	
(5) Thinking more deeply about the two-way interaction between myself and parents. More thought, less intuition within this relationship now	

(1) Need to be more tactful in personal relations
(2) Need to communicate more with colleagues, parents and children
(3) Need for greater organisation to bring about communication of new knowledge and skills

FIG. 6. The effects of increased self awareness and greater objectivity in schools situation.

For a brief outline of the causes of change on the four paired grids with no changes attributed to the course see Fig. 7. Common to all four was a fairly dramatic change in the subjects' role or status in their posts, while they were attending the course. One cannot say that the course had no influence on the teachers' participative style at work, but certainly the major role or status changes were more influential at the time when the second grids were completed.

Subject A was a teacher in a remedial department in secondary school. Department changed from being one with classes in every year to a withdrawal system which was to teach children as individuals rather than in groups. Seen as lowering in status and method of functioning of department and was the major cause of change between 1st and 2nd grids.

Subject B was a class teacher when 1st grid was completed, but at the time of 2nd grid was a remedial teacher, teaching small groups withdrawn from all classes. Also was put in charge of organising library and had been given help to do this. All changes attributed to these two.

Subject C was a deputy headteacher of primary school at 1st grid but had become acting headteacher by the 2nd grid. All changes due to this upgrading in status.

Subject D began as adult literacy co-ordinator at a Further Education Unit (FEU). Subsequently a totally new course for 50 to 60, sixteen- to nineteen-year-old students was introduced into FEU with no demarcation of status or responsibility between the lecturers of FEU. Resulting confusion (as perceived by this subject) caused major changes on 2nd grid thus eclipsing the influence of the course.

FIG. 7. Outline of perceived cause of change on four subjects' grids which did not attribute any change to Diploma course.

There was one subject who had been promoted from class teacher to a post of responsibility for the Infant department of a JMI school. Many of the changes on the 2nd grid were ascribed to this promotion, but the course too had changed her perceptions of her role in teaching.

Discussion

The large number of positive outcomes must be seen as a rewarding feedback to the Director of Studies and the teachers of the Post Experience Diploma in Literacy Development course at Middlesex Polytechnic. That they embrace so many vital areas of the school's life, must be relevant for headteachers, colleagues and LEAs who make it possible for the teachers to attend. No one teacher mentioned all these effects, but at least two were mentioned on all but one grid. One subject spoke of considerable personal gain "when out of school for the term it gave me a new perspective, being able to step aside from school and myself. It gave me a more objective view of the school and my thoughts about the school". However this subject only mentioned two negative or ambivalent effects (to be discussed below). But each of the positive effects would enhance the quality of the teacher input at school as they span several important areas of organisation and planning; improved communications with colleagues and parents, and with some special outcomes directly affecting the children.

Working within the framework of the 'sets' sorted by the five teachers who were unrelated to the Diploma course (see Fig. 5), and the unsorted outcomes of Fig. 6, it is clear that many of the changed perceptions of the teachers had been influenced by the stated aims of the Diploma.

(a) The two major causes of change (greater knowledge and increased self-awareness) are clearly related to the theoretical input of aims (i) and (ii) (see p. 48). The objectives of term one, when the subjects are engaged in full-time study, spell out these broad aims in more detail and the second objective, "to examine the influence of social and environmental factors on language and literacy development, with special reference to the role of the school", has had its major influence on the second cause of change, i.e. enhanced self-awareness and greater objectivity. As the teachers become aware of social interactive influences within and without the school they also, it seems, become more aware of their own profound influence in social interactions.

(b) Having become more knowledgeable with more ideas and a sounder theoretical base through which to work, aims (iii) and (iv) have demonstrably influenced the practical outcomes of putting theory into practice. The management and development of literary skills (aim iii) would surely improve if teachers were, for example, better able to "select what materials and equipment to order", "do more planning for individual needs" etc. And the measuring and recording of progress in the attainment of literary skills (aim iv) has had its undoubted effect, for example, "more fully aware of importance of record keeping and reports", "able to make records and reports more relevant to teaching situation".

(c) The objective mentioned previously (that is, the influence of social and environmental factors) has also had its effects in the organisational area in the subset. "Improved communications: consultation and discussion with parents and colleagues." For example, if "all groups concerned with curriculum planning are consulted" and "facts can now be discussed during informal meetings with parents

and staff", then the knowledge of the dynamics of group interaction in relation to various social and environmental factors, has had a pervasive and very relevant influence.

(d) As the overall aim of the course is related to improving the literacy level and performance of each individual child, it is not surprising that certain outcomes should be child centred. Overtones of the theoretical input can clearly be heard when one reads "more time put into socialisation of children because of its relationship to academic success", and "keen to promote child centred discipline rather than teacher imposed discipline".

(e) It remains to discuss the negative or ambivalent effects of the Diploma on the teachers which is a very important feedback for the Director and tutors on the course. It seems that for two teachers the large input of new information induced feelings of bewilderment (see Fig. 5, numbers 1 and 2). One of these teachers only mentioned two negative outcomes and no positive effects. He was bewildered and also felt frustrated at an inability to communicate this new knowledge to colleagues (no. 3). Evidently, the Director and tutors must monitor more carefully the 'overload' factor for a minority of the students. Also they might attempt to overcome the problem of a student being unable to communicate the new knowledge to colleagues. One of the objectives of the third term tuition is "to examine and evaluate the concepts of problem solving and self management learning techniques". This seems to have been the least understood objective by a minority of the teachers who felt bewildered or highly pressured. Perhaps the tutors need to look more closely at their input here or the possiblility that this needs airing earlier in the course so that feeling overwhelmed by all the new information can be alleviated by learning new skills in self-management.

It would seem that no. 4 (pressure of work, doing job, family pressures), is inevitable in any in-service course and it may be related to no. 6 (less pleasure at doing duties at school—no time to relax). It behoves the tutors to bear in mind the problems and frustrations serving teachers feel when working virtually full-time (four days a week for two terms) and having to cope with the college requirements simultaneously.

Number 5—taking time to reach decisions about organisation of reading equipment is negative one supposes, but how much better to reach a considered decision!

Number 7—that the course so enthuses a teacher to improve literacy that there is resentment of other much valued features of school life (i.e. display) is a noteworthy outcome. Perhaps the tutors should bear in mind this interesting outcome and while enthusiastically discussing the great importance of literacy skills, to remember that it remains only one part, even if a great part, of the teacher's commitment to the child.

It was not a part of the project to ascertain if in deed as well as in word, the outcomes so far discussed were implemented, e.g. being "more fully aware of the importance of record keeping and reports" is not to say that the teacher *will* keep them. However, "greater confidence in administering reading tests", suggests they are being administered, although one cannot categorically state that this is the case. Elliot (1976) suggested that teachers attempting to change classroom practices need great support from each other. Henderson (1976) found that in order to encourage training outcomes, providing opportunities for feedback from a course member to his school was important. Both studies suggest that scheduled school time be

available for these activities to occur and this has implications for the senior personnel of the schools who have the power to authorise time-table changes. Many of the organisational and planning changes which the teachers of the Diploma course seemed set to implement, would cause changes in other classrooms. It is likely that the Diplomates would become the language and reading specialists on the staff and that they would be able to advise on changes in literacy policy. The present study would endorse the proposals of Elliot (1976) and Henderson (1976) in order that the implementation of the many positive outcomes stated by the Diploma students should be facilitated.

Finally it should be noted that for a minority of the teachers in the study who had experienced considerable role or status change in their teaching posts, no change in perception of their teaching roles was attributed to the course. This is not to say that the course had no effect, but it may be relevant to headteachers to know that major changes in the teacher's school role may interfere with the fullest possible commitment to the course.

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