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A repertory grid study of staff-student interactions

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Abstract: *This paper briefly reviews previous attempts to evaluate teaching effectiveness and suggests the repertory grid (Kelly, 1955), and associated computer programs (Shaw, 1979a), as alternative tools for such a purpose.*

A small scale study is described in which 10 students and 10 lecturers associated with the Education faculty of a Polytechnic participate in assessing the modes of communication they experience on their courses such as the lecture and seminar. A summary of the findings is reported and it is suggested that the technique used provides a more authentic dialogue between teachers and students than the use of student rating forms. The commonality of the dialogue and the shared understanding may be a more effective stimulus for change than the feedback from student ratings alone.

FOR OVER 40 years students' ratings for judging and improving classroom instruction have become an accepted tradition in many American College campuses (Derry and Brandenburg, 1978). Formatively (that is as a feedback to instructors), student ratings can signal a need for improvement, but administrators prefer to use summative measures, that is, standardized measures or end of course examinations, and standardized global items of the ratings questionnaire as a basis for recommending promotion, tenure or salary adjustments for faculty (member of teaching staff), (Derry, 1979). An example of a global item would be, "this instructor is among the best teachers I have known" (Derry, op. cit.). Despite the finding, by Costin, Greenough and Menges (1971), after an extensive survey of student ratings, that they provide reliable and valid information on the quality of courses and instructors, the present authors regard the method as 'one-sided' or student biased. Doyle and Crichton (1978) failed to locate a single study that compared either peer (other teachers) or self rating (by teachers) with student learning outcomes, so little is know about the perceptions of those who teach the courses. In their own study Doyle and Crichton (op. cit.) included peer and self ratings of faculty but found that none of the ratings by student, peer or self was significantly related to the residualized student achievement. It seems then that what is being measured does not bear directly on student learning. Doyle and Crichton also raise questions about the quality of human perception as captured by ratings and the quality of learning of the students as measured by their end of course tests. Similar doubts are raised by Derry (1979) who concludes that "a nagging suspicion remains that students' ratings do not yet have the prescriptive utility necessary for faculty to affect predictably the overall quality of the course or to improve instructors (teachers) ratings."

Evaluation of courses implies that interaction has occurred between teacher and students. The present study seeks to discover whether this is so. It is a novel approach which looks at the means of communication or methods of interaction from both the students' and the teaching staff viewpoints, thus eliminating the one-sidedness of the student ratings method. The writers would contend that it embraces a broader evaluation of interactions than that which may be associated with student rating forms. Therefore teaching, social, formal and infor-

mal communicative interactions are included. If the quality of human perception as captured by ratings is questionable (Doyle and Crichton, 1978), the use of repertory grid (Kelly, 1955) would be likely to obviate this problem. The 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 out by experiment, then reviews and revises those theories in order to act more effectively in the world. Personal Construct Theory is reflective, that is, the subject is free to reflect upon his chosen communicative interactions. This procedure eliminates the problem of having to conform to the criteria which appear on the student rating forms that have been selected by 'experts'. Such given criteria may be alien to the subject's own personal construct system. And finally this method of evaluation was considered non-threatening, whereas judging teacher performance on alien criteria might indeed be a threatening situation for the student.

The TARGET methodology has been developed (Hopwood and Keen, 1978) to appraise teaching effectiveness of teachers in training for FE/HE posts. This used the 'repertory grid' method and claims that the system provides feedback to the teacher which proves a powerful aid to self evaluation and frequently provokes overt changes in pedagogic style. The present study seeks to provide a personal feedback to all participants of their own evaluations of the means of communications they offer (teachers) or receive (students). Also for those who nominate the same elements of communication, a feedback of their 'shared perceptions' will be provided.

Method

Subjects. 20 subjects were randomly selected, 10 students and 10 lecturers. Students were reading for the modules of Dip. H.E. (Diploma in Higher Education) in a variety of subjects, or for the CNAA B.Ed., with a core of educational studies and a variety of selected other disciplines. The lecturers taught on a variety of courses offered by the Polytechnic and all were involved in the Education area to some extent.

Procedure. Subjects were asked if they could "spare an hour" to think about the way they felt they were 'communicated with' on their course at the Polytechnic. At a mutually convenient time the repertory grid(s) was elicited either individually, in pairs, or on one occasion collectively, i.e. 2 lecturers and 5 students who declared an interest in participating.

The first author elicited all the grids by explaining very simply Kelly's ideas concerning Personal Construct Theory, followed by asking them to identify the major elements of 'communication' or 'interaction' they experienced as students or teachers on their courses. Each wrote their own list and when they were satisfied the list fully covered their range of experiences, they were asked to copy the named elements on to separate cards labelled A, B, C . . . etc. The number of elements varied between subjects but for a complete list generated by lecturers and students see Appendix A. The constructs were then elicited in the usual way by offering the subjects a randomly derived list of triads (Bannister and 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 told to drop out elements as they went along if they felt they were not sufficiently independent to be maintained. Also, if they thought of new elements to put them on separate cards so that they could be included and given values on the grid at the end. (In the event, no elements were dropped, but several were added.) They were also advised to use any construct that the triads were failing to elicit.

When the grid was completed (for an example of such a grid see Appendix B), the subjects were told that they would receive a personal feedback and explanation of the computer analysis of their grid. They were asked if they would allow their grids to be compared with other subjects' grids should they have chosen common elements. Then they would receive extra feedback concerning the commonality of their thinking about the same elements. All agreed to entering the commonality grid.

Structural Analyses. The 20 grids were analyzed using the FOCUS computer program (Shaw and Thomas, 1978). Each grid is analyzed using a two-way cluster analysis to re-order systematically the rows of constructs and columns of elements to produce a FOCUSed grid showing the least variation between adjacent constructs and

adjacent elements. This is related to the way the constructs order the elements rather than the verbal labels given to the poles of the constructs. The feedback of the FOCUSed grid removes mathematical mystification as relationships are highlighted in the form of tree diagram similar to those shown in Figure 1, which show the highest similarities of the clusters. This method avoids the confusion of naming the factors which is encountered when using factor analytic methods. It also enables subjects to become aware of relationships in their own construing with minimum bewilderment, which typically occurs when attempting a feedback from a factor analytic or principal components methods.

Seven grids, three elicited by members of staff and four by students, had used five common elements: lecture, seminar, personal tutorial, videos and films, and practicals or workshops. The author checked that all sub-

FIGURE 1: The FOCUSed mode grid.

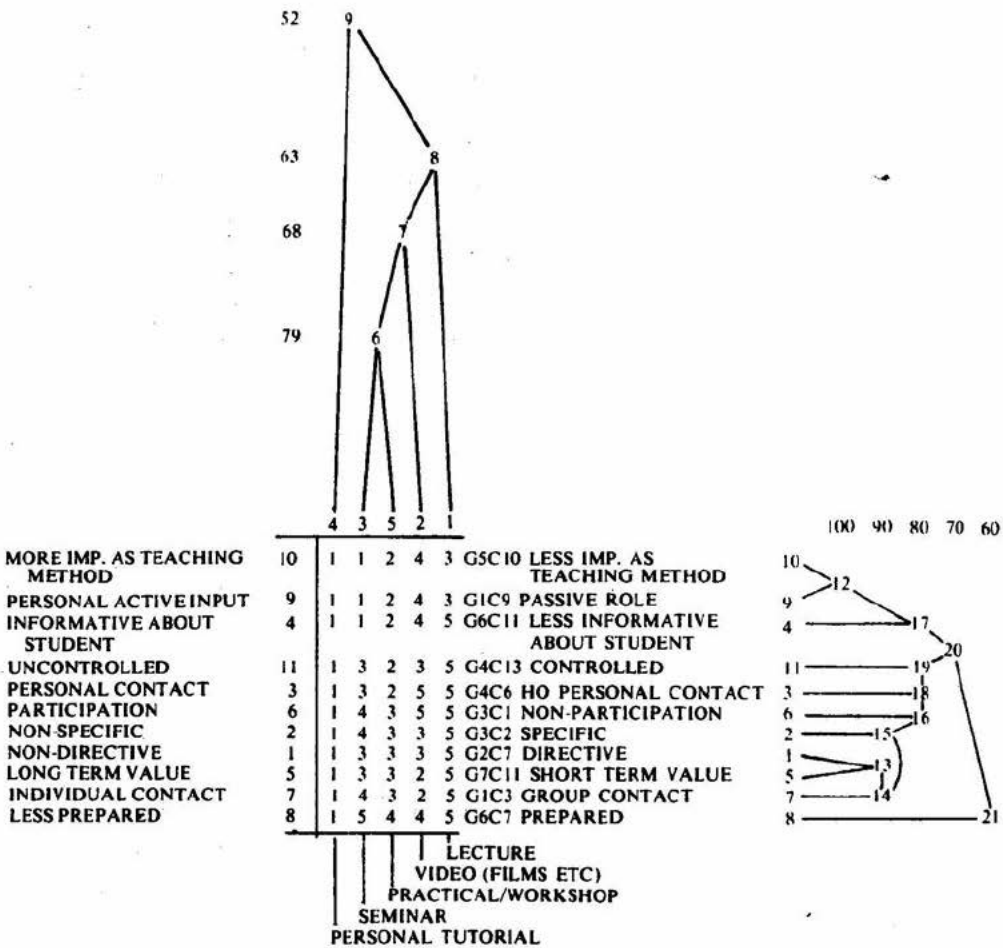
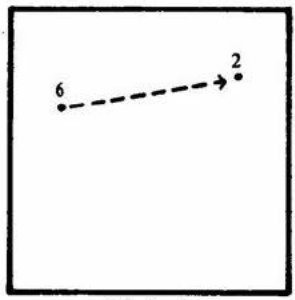


FIGURE 2: Part of the sequence of socionets.



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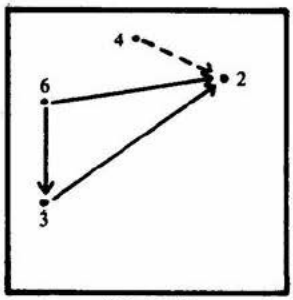

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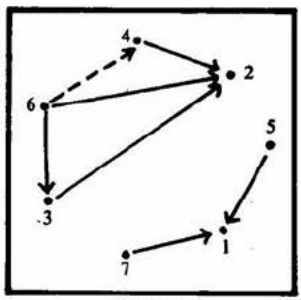

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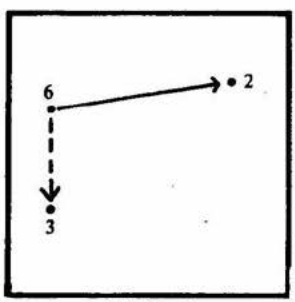

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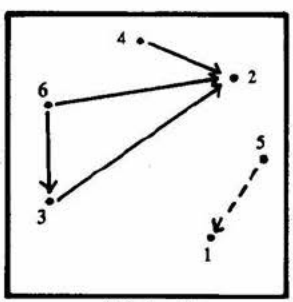

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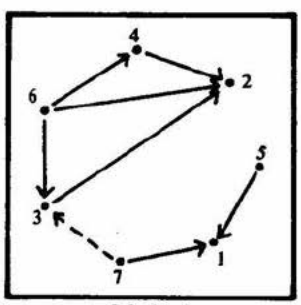

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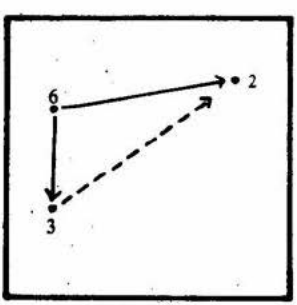

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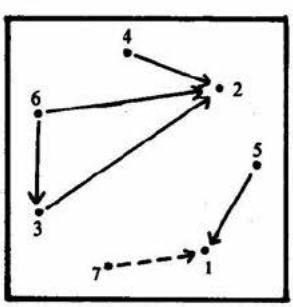

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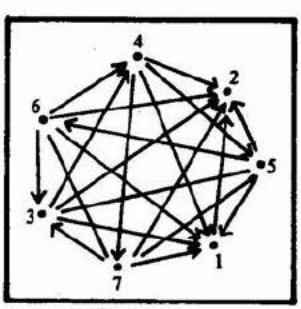

Link 21

jects had the same notion of the contact in mind:

1. Lecture: Entirely lecturer prepared, material delivered by lecturer, sometimes short explanations to individual student's questions during lecture allowed and sometimes short period of discussion concerning content of lecture at the end of the session.

2. Seminar: Student prepared, lecturer mainly chairing the ensuing discussion.

3. Personal Tutorial: A one-to-one interaction between staff and student where issues and problems of a personal nature to the student are discussed. This might include issues concerned with academic work.

4. Videos and Films: This element excluded use of overhead projector. It included use of television, films, video-tapes and slides which enlarged or exemplified various aspects of the course.

5. Practical or Workshops: included science practicals, preparation for teaching practice, including devising and preparing materials for classrooms, handicraft and art workshop sessions. Thus, a varied number of activities were involved in this element, but all were characterized by the students' "doing" physically as well as mentally.

The seven grids using the above common elements were analysed using the SOCIOGRIDS program (Shaw 1979b). This program uses a version of the FOCUS algorithm to process every pair of grids to determine the commonality between them. From these results a set of *socionets* is extracted showing the levels of commonality between pairs in descending order, the higher the commonality the earlier in the sequence it appears. This set of socionets, therefore, shows those individuals in the group who have the most in common and those with unique viewpoints.

Results

Socionets. Figure 2 shows some of the diagrams in the socionet sequence.

Some interesting points arise; quite early in the linking system (by link 6) all seven members are involved although at this juncture two sub-grups are indicated. However by link 8 the two sub-groups become linked indicating a growing understanding between all members. This process continues until at link 21 one can clearly see there is no evidence of staff and student viewing these communication elements in any systematically different way. No 'isolate' or disjoint sub-groups of any significance arose, (for further explanation see Shaw, 1979a).

Both 5 and 6 (two lecturers) have wide construct systems indicating they understood the viewpoint of most of the other members (shown by the direction of the arrows, i.e. away from them, towards other members). 1 and 2 (students) have narrower construct systems and therefore cannot necessarily empathize with constructs that they do not share with other members of the group.

The Mode Grid

A *mode grid* of the constructs most often used by individuals in the group is extracted by the SOCIOGRIDS program from the total list of constructs given by everyone. This is then focused to show the content of shared construing in the group. Each construct in the mode grid (see Figure 1) has been obtained from one individual in the group and is in no way changed when used in the mode grid. This grid then is not a grid which averages out the individuality to produce a pale imitation of the group, but is strongly weighted towards the commonality or intersection of construing within the group. Due to this format the constructs tend to be highly clustered in the mode grid, and generally these clusters display a high degree of both literal and conceptual similarity in the construct labels as denoted by Duck (1973). In a field where more technical language is used it would be impossible for the non-expert to rely on his own judgement of what constituted literal and conceptual similarity. This seems a powerful technique for identifying such similarity by a more reliable process than has been used in the past (see Shaw, 1979a). The mode grid can then be used as a common referent for the group with which each individual may be compared.

From the *construct tree* of Figure 1, the *lecture* is seen by students as a means of communication overly directed by the lecturer in a very specified format, where the student feels very much a member of a group

with loss of individuality and where he/she only occasionally takes an active part. The lecturers in turn regard the lecture as only a moderately important teaching method, having short term value and providing very little information about the student. *The personal tutorial* is viewed by students as unspecified in organization, a non-directive interaction where they are given individual attention and where they make a very active, personal contribution. Interestingly, the lecturers see it as being highly informative astudents, a very important method of teaching and of the greatest long term value. *Video/film* is regarded by the students as not particularly specific or directive, where their role is passive, but making an individual contact with them. Staff, perhaps recognizing it as being more individual to the students, feel it to be of longer term value than the seminar, workshop/practical and the lecture. Staff regard this contact as giving them little information about students and one of the less important teaching methods. Students make their greatest active contribution in a *seminar* which is not a particularly directed situation. Yet a rather specified format pertains and the student feels a part of a group rather than an individual. Staff regard the seminar as providing a great deal of information about the student, and as a very important teaching method, but only of moderate long term value. The discrepancy between the seminar seen as 'personal active input' and also 'non participation' may be due to the student who is giving the seminar feeling very active, but the rather specified format still making the rest of the students feel one of the group and not overly participative. Students make an active input during the *practical/workshop* session, but they do not feel that it is particularly directed, specific, or an individual means of communication. However, staff regard them as a more important teaching method, providing information about the students, but only of moderate lasting value.

Construct 8 enters the tree on its own at only a 60 per cent level of similarity. A member of staff sees the lecture and seminar demanding a great deal of preparation, and the video/workshop session is also pretty demanding of his/her preparation time. Contrastingly, the personal tutorial demands little preparation. Is the spontaneity of this contact with the students, in part, the source of approval? If so, can some of the enormous effort made in preparation for the lecture and seminar be directed to increasing the participation of students and to making them feel more individual?

Looking at the *element tree*, it can be seen that workshop/practical and seminar are the most closely (79% similarity of ordering of constructs), then joined by video/film (68%) and lecture (63%). The personal tutorial is clearly viewed in a considerably different way, resembling the other elements at a 50% level.

The previous discussion would predict this outcome because the workshop/practical and seminar were construed quite similarly, then the video/film element resembled the lecture rather more than the workshop or seminar. But the personal tutorial, held in very high esteem by staff and student alike on all of the constructs had a much lower level of similarity to the other elements.

Discussion

Kelly's commonality corollary states that "to the extent that one person employs a construction of experience which is similar to that employed by another, his processes are psychologically similar to those of the other person" (Kelly, op. cit.). As the basis of the SOCIOGRIDS program is the commonality of construing of a group of individuals (for further discussion see Shaw 1979a), perhaps the most interesting outcome of this study is the similarity of the viewpoints of lecturers and students. Thus any change that might come about would be likely to be understood by all participants. The problem that human perceptions may not be sensitively reflected by ratings (Doyle and Crichton, 1978) is overcome by this method, where only the freely elicited constructs of the subjects, obtained in a non-threatening manner, are considered. With such a small sample drawn randomly from students and lecturers on a variety of courses, it would be unwise to draw any firm conclusions. However, the highly valued qualities of the personal tutorial might provide food for thought for lecturers and students. For instance, can these qualities be adopted in greater measure in other teaching interactions? And it would certainly seem relevant to foster the personal

tutorial system in Higher Education Establishments. Elmore and Pholmann (1978) found that favourable ratings of faculty members were related to those who encouraged student participation in the course, showed an interest in students, made themselves available to students, accepted criticisms and suggestions etc.; criteria that are remarkably similar to those employed in personal tutorial interactions. But Remmers (1958, p.20) points out that "No teacher has any choice as to whether he wishes to be judged by his students. The only choice he has is whether he wishes to know how he is judged and thus possibly capitalize on his feedback". It seems then, that if a method which involves both staff/faculty and students truly investigating their own viewpoints on similar elements of communication is available, the commonality of the dialogue and the shared understanding may be a more effective aid to change than having a feedback from student ratings. The shared perceptions highlighted by the repertory grid method seem to provide a basis for open negotiation to effect change. On the other hand the one-sided perceptions reflected by the student rating questionnaires would, one suspects, create a less negotiable situation for change. The bonus is also that each individual participant has his/her own personal feedback, providing an opportunity for reflection and a powerful aid to self evaluation (cf. Hopwood and Keen, 1978). Consequently this may lead to individual change in pedagogic style for a teacher and in participative style for a student. As Derry (1979) argues that rating forms are so general that they have little diagnostic utility, the above technique may offer a more authentic dialogue where teachers and taught can examine their shared experiences in a non-threatening, involved and incisive manner.

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APPENDIX A

Total list of elements generated by staff and students

Lecturers

1. Lecture
2. Personal tutorial
3. Seminar
4. Audio-visual/films
5. Unscheduled discussion
6. Academic tutorial
7. Video
8. Workshops/practicals
9. Chats
10. Handouts
11. Essay preparation
12. Blackboard, Overhead projector
13. Listening
14. Case study
15. Computer
16. Task followed by discussion
17. Field course
18. Notices
19. Book lists
20. Notes (memoranda), letters
21. Telephone
22. Demonstrations
23. Visits

Students

1. Lecture
2. Conversatons with tutor
3. Letters (official)
4. Tutorial
5. Video/films
6. Student seminar
7. Chatting
8. Handouts
9. Personal tutorial
10. Study – personal skills
11. Reading in library
12. Workshop/Practical
13. Academic Tutorial
14. Group discussions
15. Informal work between students
16. Meetings
17. Telephone messages
18. Unprepared seminar
19. Small group lecture
20. B.S. B.S. preparation (preparation for teaching practice).
21. Friends
22. Year meetings
23. Tutorial guidance in schools
24. Visits

APPENDIX B

Example of a raw grid elicited from a student

		1	2	3	4	5	6	7	8	9	
SCHEDULED	1	1	1	5	1	1	1	1	1	1	UNSCHEDULED
MENTAL PREP.	2	2	1	5	1	2	1	2	4	3	MENTAL UNPREP.
IND. CONTACT	3	5	4	1	1	3	2	5	2	1	GROUP CONTACT
INVOLVEMENT	4	3	1	1	1	3	4	2	4	1	UNINVOLVEMENT
PERS. INTEREST HIGH	5	3	2	1	3	1	2	3	1	2	LOWER PERS. INT.
UNPRESSURED	6	2	5	1	4	2	1	3	1	4	PRESSURED
RIGID COURSE	7	2	1	5	1	3	3	2	4	3	LESS RIGIDITY
PLEASANT	8	4	5	2	4	3	3	4	1	3	LESS PLEASANT
PERS. ACTIVE INPUT	9	3	1	1	1	2	4	3	5	1	PASSIVE ROLE

PERSONAL TUTORIAL
OFF SITE VISITS
GROUP SEMINAR
TELECOMMUNICATION
PRACTICAL
PERSONAL TUTORIAL ACADEMIC
SOCIAL INFORMAL CONTACT
INDIVIDUAL STUDENT SEMINAR
LECTURE