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Paul Ashwin

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Peer Facilitation and How it Contributes to the Development of a More Social View of Learning

PAUL ASHWIN

University of Oxford, United Kingdom

ABSTRACT Peer learning involves a new role for the students who facilitate the learning of other students. The role of the peer facilitator, which is focused on learning through supporting the learning of other students, would appear to be more social than the traditional role of learner, which is focused on self-learning. This research used repertory grids to investigate whether taking on the more social role of the peer facilitator was related to changes in what students perceived as important in teaching and in learning. Initially, all students saw constructs relating to expectations of the self as more important in learning than those relating to interaction with others. However, in a later repertory grid, the students who acted as peer facilitators saw interaction with others as a more important element of their learning. There was no comparable change in the perceptions of what was important in learning amongst students who were not involved in peer learning or in the perceptions of what was important in teaching amongst all students. These findings are explained with reference to recent developments in the student-learning literature. Their implications are explored both in terms of helping students to develop a greater understanding of their roles as learners and in offering an additional dimension with which to explore students' learning.

Introduction

'To teach is to learn twice' is a phrase that is often used in relation to the benefits accruing to students who act as peer facilitators as a result of their involvement in peer learning. For example, Whitman (1988) used it as the subtitle of his book on peer teaching. Peer facilitators are seen to benefit from taking on the role of a teacher because it involves them restructuring the material they are helping another student to learn (Bargh & Schul, 1980; Annis, 1983; Fantuzzo et al, 1989; Falchikov, 1990). For example, Annis (1983) argues that teaching involved 'students in such essential learning tasks as giving the information organisation and structure, grouping or chunking the material

to be learned into smaller groups and forming rich associations between the new material and things they already knew' (p. 46). However, the role of the peer facilitator, with its focus on learning through supporting the learning of others, can also be seen as more social than the traditional role of the learner. The purpose of this research was to examine whether this more social role of a peer facilitator in peer learning appeared to be related to changes in students' understanding of what is important in teaching and in learning.

Repertory grids with eight students (five peer facilitators and three non-peer facilitators) found that their constructs relating to the roles of teachers and learners could be categorised as either relating to expectations of the self or to interaction with others. Initially, constructs relating to expectations of the self were predominately ranked as most important in learning by all the students. However, after acting as peer facilitators for an academic year, there was an increase in the number of constructs relating to interaction with others that were ranked as important in learning by the peer facilitators. There was no comparable change in the rankings of the non-peer facilitators. The change in the peer facilitators' rankings of what was important in learning is explained by reference to Marton & Trigwell's (2000) view of learning. The implications of these findings for helping students to develop a more sophisticated understanding of what is involved in learning are examined, as are the implications for research into students' learning.

Defining Terms

Peer learning is used here to refer to situations where students formally support each other in educational settings. Other authors have used terms such as 'peer tutoring' (Goodlad & Hirst, 1989; Topping, 1996), and 'peer teaching' (Goldschmid & Goldschmid, 1976; Whitman, 1988). The term 'peer learning' is preferred as it emphasises the experience of all students who participate in it. Peer learning was defined in this research as occurring in any formalised interaction where students' learning is facilitated by other students who are studying, or who have recently studied, the same learning material or at the same institution. The learning support offered reflects the manner in which the students are peers and is beneficial to both groups of students involved.

This definition assumes that peer learning involves two groups of students, those whose learning is facilitated, and those who facilitate. However, during a single peer learning interaction the same student, at different times, can both act as facilitator and have their learning facilitated by other students. This definition of peer learning does not define the sort of facilitation that is involved in peer learning apart from the fact that it should reflect the way in which the students are peers either in terms of the subject, or the context in which they are studying. Also, both groups of students should benefit from the interaction in some way. The vagueness of this definition is deliberate as peer learning is a generic term that includes all forms of peer learning that fall under the definition, whilst individual peer learning strategies can have different names.

The Role of the Peer Facilitator

The role of the peer facilitator is to support the learning of other students whilst learning themselves. The precise role varies between different forms of peer learning. In this article, it is the role of the peer facilitator in the form of peer learning called 'Peer Support' that will be focused on. This form of peer learning operated on an 'A' level Science course in a Further Education College from October to May (see Ashwin, in press, for further details).

In peer support, peer facilitators are called 'peer supporters'. Ashwin (in press) investigated the outcomes of this form of peer learning for the 'A' level science *students* whose learning was facilitated. The actual, as opposed to the planned, role of the peer supporters involved preparing material, in the form of past examination articles, for use in the sessions, facilitating discussions about this material between the students who attended Peer Support and collecting feedback on the sessions from the students who attended them. This role is more social than that of learners on the 'A' level Science course, which involved attending lectures, practical sessions and completing individual work set by the course teachers.

Peer Support was based on Supplemental Instruction (SI) (Blanc et al, 1983; Center for Supplemental Instruction, 1998), with second year students taking on the role of SI leaders and the support being offered to first year students. Support was offered in Chemistry and Pure Mathematics and Statistics and first year students' attendance at each of the sessions was voluntary. The peer supporters ran 34 sessions, with 44 students out of the 52 students studying first year Chemistry and/or Pure Mathematics and Statistics the students attending at least one session and an average attendance of 19.8 students. The training of the peer supporters focused on briefing them on their role and discussing their models of how to support their fellow students. The peer supporters were given on-going support weekly in which they discussed the sessions and their entries in their reflective journals. The idea was to encourage them to run the sessions in a way that made sense to them and then discuss how the sessions might be improved, rather than attempting to get them to run their sessions according to a pre-defined model. The reason for structuring the training and on-going support of the peer supporters in this way was to allow the peer supporters and the students who were facilitated to develop their understanding of the structure of the sessions at the same time.

This article investigates whether this more social role of the peer supporters was related to changes in their understanding of what was important in teaching and in learning.

Research Methods

The research sought to examine whether involvement in peer support was related to changes in the peer supporters' views of what was important in learning compared to a non-peer supporter comparison group. Repertory grids

were elicited from both groups of students (the peer supporters who ran peer support sessions in 'A' level Sciences and a non-peer supporter comparison group) to examine whether they used particular types of constructs in thinking about teaching and learning and whether their ranking of these different types of constructs appeared to change over time. A focus group discussion with the peer supporters was used to support the evidence from the repertory grids.

Repertory Grids

Repertory grids were developed by George Kelly (1955) as a way of eliciting ways of thinking or 'constructs' without giving participants pre-defined constructs to choose from and without basing their responses on questions that the researcher asks. Instead participants are asked to think of people who fulfil certain roles, and their constructs are then elicited through the participants comparing and contrasting people in each role.

Repertory grids have been used extensively in educational research for a variety of purposes. For example, to examine how academics conceptualise their roles (Kreber, 2000), to compare the constructs of postgraduate students and research staff relating to research (Diamond & Zuber-Skerritt, 1986; Zuber-Skerritt, 1987), to enable students to reflect on their professional development and provide feedback to the course team (Fisher et al, 1991), and to examine how students construe their lecturers and how lecturers construe their students (Ryder, 1987).

In this study, two repertory grids were elicited from each of eight students (5 peer supporters and 3 non-peer supporters) through one-to-one interviews; once at the start of the academic year in October and once towards the end of the academic year, in May the following year. The 'A' level Science course leader selected the non-peer supporters as a suitable comparison group for the peer supporters based on their ability and approach to their studies.

In the first grid participants' constructs were elicited by asking them to identify, and compare and contrast five teachers and five learners they had encountered on the 'A' level Science course. These teachers and learners made up the elements of the grid. These elements were compared and contrasted in groups of three (triadic elicitation). The participants were asked to identify how two of the three elements were the same and the other was different. These similarities and differences formed bi-polar constructs (see Figure 1 for an example repertory grid). The participants were asked to define each of the poles of their constructs and verbatim notes of these definitions were taken and checked for their accuracy by the participants. When the participants felt they had elicited all of their relevant constructs, they rated each of the elements from 1 to 7, according to the pole of each construct they were most like; with ratings of 1 and 7 referring to either pole of the construct and ratings of 2, 3, 4, 5, and 6 referring to different points between these two poles (see Figure 2 for a completed repertory grid). Participants were then asked to rank each of their constructs in terms of their importance in teaching and their importance in

learning. As can be seen in Figure 2, if the participants felt it was the first pole of the construct that was important then the rank was positive, and if it was the second pole that was important it was given a negative rank. If the construct was irrelevant to teaching, or to learning, it was given a rank of zero. In their second grid, participants were given a copy of their first grid with the ratings of each teacher and learner, and the rankings of the importance of the constructs, removed. They were then asked whether they wanted to change or add any constructs before they again rated the teachers and learners and ranked the importance of the constructs.

Importance in Teaching (rank)	Importance in Learning (rank)	Constructs		Elements														
		1 ← 4 ← 7	← 4 ← 7	Teacher 1	Teacher 2	Teacher 3	Teacher 4	Teacher 5	Learner 1	Learner 2	Learner 3	Learner 4	Learner 5					
		+	-															
		1 st pole of construct	2 nd pole of construct															

Figure 1. An example repertory grid.

Importance in Teaching (rank)	Importance in Learning (rank)	Constructs		Elements									
		1 ← 4 ← 7	← 4 ← 7	Teacher 1	Teacher 2	Teacher 3	Teacher 4	Teacher 5	Learner 1	Learner 2	Learner 3	Learner 4	Learner 5
0	-4	Authoritative	Soft & Inspiring	7	6	4	7	5	6	5	5	5	4
-2	-3	Nervous, Unsure	Calm & relaxed	7	7	6	6	7	6	6	7	3	3
-3	-2	Understanding not kind	Understanding & Kind	7	6	5	7	4	6	6	7	3	4
-1	-1	Complacent	High aims, standards	7	7	7	7	6	7	7	6	5	3
0	-5	Unexciting	Exciting, Funny	6	7	4	6	2	6	5	6	2	3
0	0	Tense, serious	Easy Going	7	5	3	6	2	5	4	6	3	6

Figure 2. Javid's [1] completed repertory grid.

In this study, it was the definition of the poles of the constructs and their ranking in terms of their importance of teaching and learning that were analysed. The rankings of the importance of the constructs in teaching and learning were examined to see whether particular *types* of constructs were ranked as important in teaching and in learning. In order to do this the grids of all of the participants were analysed to identify the types of constructs that were

used in thinking about teaching and learning. The two grids of each participant were then compared to examine whether there was a change in the constructs that were ranked as important in teaching and important in learning.

Focus Group Discussion

A focus group discussion was conducted with four of the five peer supporters. The peer supporters discussed a series of questions relating to their experience of acting as peer supporters. To allow for the possibility that some students might not express their opinions in full in a group setting, the students then wrote individual responses to the questions. The discussion was recorded and transcribed verbatim. The quotes from the discussion in this article were selected on the basis that they represented views that were expressed consistently in the discussion and in the peer supporters' individual responses to the questions.

Results

In analysing the participants' repertory grids it was their definitions of their bipolar constructs and their ranking of their constructs, in terms of their importance in teaching and learning that were considered. The participants' definitions of their constructs were examined to see if they used particular types of constructs to think about teaching and learning. Two types of constructs were found; those that related to how people interact with others (other) and those that are related to people's expectations of themselves (self). For example, two of Javid's constructs, his descriptions of them, and their subsequent categorisation, are shown in Figure 3. Each of the participants' constructs and their definition descriptions were examined and were found to refer either to how people interact with others or people's expectations of themselves.

Poles of construct	Description	Categorisation
'Soft and Inspiring' and 'Authoritative'	'Authoritative' is tense, stuck up, moody. You are always afraid of being told off. 'Soft and Inspiring' is the opposite. They have a smile on their face; their manner would be gentle and encouraging. If you go to them with a problem, you can fully describe what the problem is	Other. It is based on how people interact with other people
'Complacent' and 'High aims / standards'	Students who are really good still strive for perfection. They want to do even better. 'Complacent' teachers do not want to teach more than is necessary – they see it as a waste of time	Self. It is based on people's expectations of themselves

Figure 3. A peer supporter's description of two of his constructs and how they were subsequently categorised.

The participants' rankings of what was important in teaching and learning were analysed to examine whether they were related to the two types of constructs identified above. Table I shows that in the peer supporters' first repertory grid, of the 14 constructs that relate to expectations of the self, 12 were ranked as important in learning and seven were ranked as important in teaching. Whilst for the 28 constructs relating to interacting with others, 12 were seen as important in learning and 23 were seen as important in teaching.

	Constructs in grid relating to:		Constructs relating to 'Self' ranked as important in:		Constructs relating to 'Other' ranked as important in:	
	Self	Other	Teaching	Learning	Teaching	Learning
Sajida	4	5	0	3	4	1
Arvinder	5	5	3	5	5	2
Dinah	2	7	2	2	5	3
Javid	1	5	1	1	4	2
Tunde	2	6	1	1	5	3
Totals	14	28	7	12	23	12

Table I. The number of constructs elicited from each peer supporter in their 1st (October) grid relating to self and to others and how many were ranked as important in teaching and learning.

Table II shows a similar pattern for the non-peer supporters, with 12 out of 13 constructs relating to expectation of the self being ranked as important in teaching and 13 in learning, and 18 out of 18 constructs relating to interaction with others being ranked as important in teaching and 11 important in learning. This suggests that at the start of the academic year before the peer supporters had ran any sessions, whilst constructs relating to the self were viewed by peer supporters and non-peer supporters as important in both teaching and learning, constructs relating to others were not seen as important in learning as they were in teaching.

	Constructs in Grid relating to:		Constructs relating to 'Self' ranked as important in:		Constructs relating to 'Other' ranked as important in:	
	Self	Other	Teaching	Learning	Teaching	Learning
Hannah	5	5	4	5	5	3
Cathy	5	5	5	5	5	3
Omar	3	8	3	3	8	5
Totals	13	18	12	13	18	11

Table II. The number of constructs elicited from each non-peer supporter in their 1st (October) grid relating to self and to others and how many were ranked as important in teaching and learning.

Tables III and IV summarise the difference in the constructs that were ranked as important in teaching and learning between the first and second grids completed by each peer supporter and non-peer supporter. These show that there was an increase in the number of constructs relating to interaction with others that were ranked as important in learning by the peer supporters. There was not a comparable change in the rankings of what was important in learning for the non-peer supporters nor in the rankings of what was important in teaching from the students from both groups.

	Change in constructs relating to 'Self' ranked as important in:		Change in constructs relating to 'Other' ranked as important in:	
	Teaching	Learning	Teaching	Learning
Sajida	+1	0	0	+1
Arvinder	0	0	0	+2
Dinah	0	0	+1	+2
Javid	0	0	+1	+3
Tunde	0	0	0	+3

Table III. The change between each peer supporter's 1st (October) and 2nd (May) grid in the constructs that were ranked as important in teaching and learning divided between those relating to self and others.

	Change in constructs relating to 'Self' ranked as important in:		Change in constructs relating to 'Other' ranked as important in:	
	Teaching	Learning	Teaching	Learning
Hannah	0	0	0	+1
Cathy	0	0	0	0
Omar	0	0	0	0

Table IV. The change in each non-peer supporter's 1st (October) and 2nd (May) grid in the constructs that were ranked as important in teaching and learning divided between those relating to self and others.

The results from the analysis of the grids of the peer supporters and non-peer supporters suggest that the experience of being a peer supporter was related to changes in their views of what is important in learning, whilst their views of what is important in teaching did not change. The changes in the grids show that the peer supporters saw interaction with others as a more important element of their learning after being involved in Peer Support. This suggests that they had begun to see learning as a more social process. The focus group discussion with the peer supporters strengthened the idea that, in facilitating the

learning of other students, the peer supporters had begun to see learning as a more social process:

Arvinder: We learnt a few things from the students themselves. There are some things you didn't pick up when you were in the first year and some of the things they do when they come up with questions triggers something off and helps you as well.

Javid: Yeah, I think that each session was also very productive for me. It made me understand my work. If I was studying a topic by myself, there was a limited number of ways that I could look at that topic to understand it whereas with the students they all had their own ways of looking at it and that really helped.

Sajida: In the sessions you could let them just discuss things as people might come up with things that you might not have thought of and if you talk to someone about it you are more likely to remember it than if you are just read it in a book.

Tunde: I know, students tend not to exercise their knowledge by discussing what they know in a group and this is something that should be encouraged more.

This change was also suggested when Arvinder wrote in his individual responses about the relationship between teaching and learning:

I would say there are only limited ways of teaching but different ways of learning. At the moment I think the only way of teaching is the teacher at the front, writing everything down. I used to think that the only way of learning was being taught but having been a peer supporter I now think there are different ways of learning, taking it down from the teacher obviously, but also talking to your friends, there's independent learning, there's computers and things like that. I think you should have a teacher dishing out the knowledge and writing on the board but students should also be able to talk amongst themselves in a little group where they can go over a topic and talk about it, read it and work together.

It appears that involvement in peer learning as a facilitator of learning led to changes in the peer supporters' understanding of their roles as learners to one which included a greater focus on the social aspects of learning. This in turn can be viewed as a better understanding of their roles as learners because many studies have suggested that interacting with others through group work and co-operative learning are effective ways for students to learn (for a summary of this research see Biggs, 1999, pp. 87-89). If students view their role as learners as simply involving working on their own then they are unlikely to see interaction with others as important in learning. This is not to suggest that seeing interaction with others is more important in learning than working alone, it is rather that if students see both as important then it will extend the choices they

have in deciding how to learn. The quote above from Arvinder is a particularly good illustration of how involvement in peer learning as a peer supporter appeared to help these students to see learning as involving a greater range of activities but did not appear to affect their view of what teaching involves. It appears that the role of the teacher was accepted as immutable.

Discussion

The results above suggest that, in this form of peer learning, Peer Support, taking on the role of a peer facilitator, which was more social than the role of a learner within this context, was related to students seeing learning as a more social process.

Marton & Trigwell's (2000) view of learning offers a way of interpreting these findings. They argue that learning occurs through involvement in social practices in which students discern variation in what they are learning. Marton & Trigwell (2000), based on the work of Lave & Wenger (1991), conceive of learning as a by-product of participation in social practices, rather than focusing on the single individual learner. In looking for ways of engaging students in meaningful learning, Marton & Trigwell (2000) argue 'An obvious approach would be to let them participate in meaningful practices, to engage them in learning communities' (p. 384). Building on Bowden & Marton (1998), they also argue that students need to experience variation in the critical aspects of the object of their learning in order to learn.

Using these ideas, these findings can be interpreted as suggesting that the role of the peer facilitator offered these students an opportunity to increasingly participate in the teaching and learning environment in a meaningful way through supporting other learners. They took a greater, and more social, part in the teaching-learning process through having some responsibility for the learning of others, as well as for their own learning. This new role appeared to offer students the opportunity to experience variation in their roles as learners. In acting in a role that involved responsibilities beyond that of the role of learner within this context the peer facilitators began to see learning as a more social activity. The peer facilitators did not experience variation in their roles of teachers and so this may explain why their views of what teaching involved did not change. It is important to note that the change in students' perceptions of what was important in learning occurred in a context in which the teaching and learning context was firmly asocial. It is an interesting question as to how this result might have been affected if the teaching and learning context had been more socially oriented.

Together, the findings in this study and their interpretation using the ideas of Marton & Trigwell (2000) have implications for helping students to further understand their roles as learners as well as for research into student approaches to learning. First, if these findings were replicated in other contexts, this would suggest that if students could be offered more involvement in their learning communities and more variation in their role as learners, then their

understanding of that role could be increased. The role of peer facilitator is one way to offer students' variation in their roles as learners but perhaps students may benefit if the roles and responsibilities of teachers and learners in the teaching and learning process were varied according to, for example, students' experience and knowledge of the material being studied. This idea is not new, many innovators have varied the roles of learners within the teaching and learning process (for example, Abercrombie, 1960; Eraut et al, 1975; Heron, 1989; Rowland, 1993). These studies show the benefits of an *active* decision by teachers, preferably in discussion with the students, to divide up the responsibility for the teaching and learning process in a particular way based on students' experience within a context, rather than assuming that the role division between teachers and students should remain static over time and across contexts.

Second, and finally, this study suggests that there is variation in students' perceptions of learning along the dimension of learning as an individual process and learning as an individual *and* social process. However, constructs relating to learning such as deep and surface approaches to learning (for example see Marton et al, 1997) focus on individual learners' perceptions of learning as an individual, *rather* than a social, process. If, in further research, this new dimension is found to be related to the quality of students' learning outcomes, then this may offer new insights into the teaching and learning process.

Conclusion

This article reports on research that investigated the relationship between students taking on the role of a peer facilitator, which is more social than the traditional role of learner, and their views of teaching and learning. It found that students who had acted as peer facilitators changed their view of what was important in learning to include an increased focus on interaction with others. These findings suggest that students may benefit from more variation in their roles as learners. They also suggest that further research examining the relationship between the quality of students' learning outcomes and their perceptions of learning as an individual process or as an individual and social process may further our understanding of the teaching and learning process.

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Correspondence

Paul Ashwin, Institute for the Advancement of University Learning,
University of Oxford, Littlegate House, St Ebbe's Street,
Oxford OX1 1PS, United Kingdom (paul.ashwin@learning.ox.ac.uk).

Note

[1] All of the names of the students used in this article are pseudonyms.

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