The Learning Environment of Peer Assisted Learning

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The learning environment of Peer Assisted Learning (PAL) in one British university is investigated and described. Student perceptions of involvement in the student-led, small group study sessions of PAL are reported, as are results of observations of PAL sessions, and used to propose two complementary models of approaches to learning and interaction manifest in PAL. It is suggested that PAL can operate in a functional and truly cooperative fashion, but that implementers should be cautious not to assume that PAL programmes operate at all times as intended.

Introduction

Peer Assisted Learning (PAL) is a form of study support whereby experienced students ('PAL Leaders') support the learning experience of other, less experienced students and has been established at a number of Universities and Further Education colleges across the United Kingdom since the early 1990's (Wallace, 1992). Whilst terminology and modes of operation vary, characteristic features of PAL include: the training of PAL Leaders in study techniques, group management and facilitation skills; cross-year support (for example, second and/or third year PAL Leaders supporting first year students); the matching of one or a pair of PAL Leaders to a small group of up to 25 first year students; weekly hour-long, classroom-based 'PAL sessions' where the group meets; a focus on matters particular to students' course of study but with scope for non-course-related discussion (e.g. adjusting to university); an emphasis on discussion-based, active learning with 'teaching' or re-teaching (that is to say, didactic, instructional presentation of subject material) by PAL Leaders of course subject matter strongly discouraged; and partnership between the PAL scheme and academic staff. Examples of characteristic features described by implementers can be found in Ashwin (2002), Donelan (1994), Wallace & Rye (1994), Spencer & Wallace (1994), Donelan & Kay (1998), Capstick & Fleming (2001), Packham & Miller (2000), Wallace (2003).

PAL derives from the widespread North American model called 'Supplemental Instruction' (SI), a somewhat misleading term which actually refers to study sessions similar to those described above which are intended to 'supplement' the 'instruction' students receive. SI was devised in the mid-seventies (Blanc et al., 1983) and has since spread to perhaps two hundred institutions in the US. PAL initially drew heavily on this model - and still owes much to this heritage - although in the UK it has developed a distinctive approach to suit local conditions (for a discussion of UK implications in one institution see Wallace, 1995).

Much has been written about the efficacy of PAL and SI (particularly the latter) in terms of the ability of the scheme to raise students' marks (e.g. for PAL: Bidgood, 1994; Coe et al., 1999; Ashwin, 2003a and for SI: Congos et al., 1997; Congos & Schoeps, 1998; Kochenour et al., 1997). It has also been suggested that PAL/SI enables the development of transferable skills enabling heightened performance in classes other than those targeted by PAL (Price & Rust, 1995), including aiding the development of critical thinking skills (Koehler, 1995; Congos & Schoeps, 1998; & Gordy, 1987). Other research has looked at the influence and outcomes of PAL for PAL Leaders including the development of a more social view of learning (Ashwin, 2003) and enhancement of a range of personal skills (Donelan, 1999; Gibbon & Saunders, 1998).

Researchers have suggested or assumed that the benefits of PAL arise through its discursive, active approach to learning. PAL is intended to represent a particular manifestation of cooperative learning, a "truly cooperative initiative" (Donelan & Wallace, 1998). (Cooperative learning, in turn, may be defined broadly as "working together to accomplish shared goals" (Johnson & Johnson, 1989).) In PAL, the intention is for students to "collaborate to supply missing information or attempt

solutions to problems as they help each other" (Congos & Schoeps, 1998), and that "thinking skills and knowledge and understanding of course subject matter may develop within the co-operative environment of the PAL session." (Capstick & Fleming, 2001). Donelan (1999) presents some research evidence to suggest that PAL is able to effect positive outcomes through: the consolidation of knowledge through participation; cooperative, informal learning through discussion and enabling social integration of students. Lundeberg & Moch (1995) suggest that the personal, cooperative approach of PAL influences cognition of students in positive ways, including ability to apply abstract ideas.

With respect to cooperative learning generally, Johnson & Johnson (1989) have concluded that cooperative learning consistently produces higher achievement than either competitive or individual effort. They refer to 'promotive interaction' in cooperative learning which occurs as individuals encourage and facilitate each other's efforts to reach the group's goals. They suggest that group members promote each other's success in this way by: giving and receiving help and assistance; exchanging resources and information (including benefits accrued from orally explaining, elaborating and summarising information); giving and receiving feedback on taskwork and teamwork behaviours; challenging each other's reasoning; advocating increased efforts to achieve; and mutually influencing each other's reasoning and behaviour. The purpose of peer interaction may be to "make the implicit nature of social learning explicit by encouraging active learning within social settings" (McCarthey & McMahon, 1995) and it has been argued that cooperative learning enables a convergence upon a meaning through social construction of shared knowledge (Roschelle, 1992).

Whilst the benefits of cooperative learning *per se* and its implications for PAL in particular are generally agreed upon, there has however been a tendency in the practice and investigation of PAL to uncritically accept a certain degree of received wisdom about what is in reality occurring within PAL sessions. Ashwin (2003a) for example points out what he considers to be "a lack of consideration of the impact of the context in which SI schemes operate on the process of the schemes and their outcomes" in the body of research reporting influence of PAL/SI on student performance. This, he suggests, is due in part to practitioners assuming that schemes run as implementers intended whilst neglecting actual processes in operation in PAL, and in part because of a bias of focus towards student performance which neglects to consider quality of learning. The emphasis, in other words, has been on demonstrating outcomes at the expense of considering processes at work in PAL. It is indeed often the case that studies assessing a link between participation in PAL and performance can be somewhat presumptive about the actual processes effecting changes in performance. Congos & Schoeps (1998) for example go some way towards proposing a model of processes at work in SI (including "refining learning and thinking skills") but use only performance data to support these assertions.

Ashwin (2003) expresses some concern that the learning environment of PAL can in fact lead to a *decline* in quality of student learning, such that it becomes less focussed upon understanding course material than upon succeeding through a greater awareness of assessment demands. He drew on the work of Entwistle & Ramsden (1983) and a later design of the Approaches to Studying Inventory (Richardson, 1990) to assess for any change in orientation towards study of students participating in PAL, to conclude that "peer learning works by helping students come to terms with the demands of their course" but suggested that, depending on the context, this could be "at the cost of deeper understanding of the material they were studying".

It has in fact long been recognised that such 'strategic' questions are a feature and indeed an objective of PAL (Spencer & Wallace, 1994) though they are usually only considered to be a part of a range of other learning activities. Packham & Miller

(2000) suggest that in their experience of running a PAL scheme in the UK, student demands in PAL sessions were primarily assignment-driven and used to meet immediate academic needs, and other studies have also reported similar experiences (Gibbon & Saunders, 1998; Miller & Packham, 1999). Interestingly, Packham & Miller (2000) report a modification in training of PAL Leaders in an attempt to reverse such a strategic trend and instead promote the intrinsic benefits associated with student-centred learning. Whilst in PAL the effective consideration of strategic aspects of the course may be entirely appropriate - students are entitled to know and should benefit from knowing what is expected from them in an essay, for example - this should not be at the expense of meaning-oriented approaches to learning, such as consideration in PAL sessions of difficult conceptual material.

A separate apprehension often expressed about PAL is that it may amount to pseudo-teaching by PAL Leaders. This anxiety is illustrated in Donelan (1999) when reporting the opinion of her Sub-Dean about PAL:

> "…it is not appropriate for second year students to teach (as opposed to facilitate) first year students. Unfortunately (and I suspect inevitably) there is a continuing tension within PAL between teaching and facilitating and the most popular PAL Leaders, I suspect, are often those who stray too far towards the former"

There are of course numerous dangers inherent in PAL Leaders teaching students: they could convey incorrect or misleading information; they are not qualified to do so; it is unfair to place (even unwittingly) such a demand upon them; they would be straying into the territory of those who are teaching; the scheme could come to represent 'teaching on the cheap'; it detracts from what PAL is intended to be about. It should be emphasised that awareness and sensitivity among implementers of PAL of this issue is high and that the concern has always been to train and direct PAL Leaders to facilitate rather than teach (Wallace, 1997),, with the issue of such a crux that Gunning (1993) was led to write a paper entitled *Supplemental Instruction Is Not Teaching*.

It seems fair to concur then that the principles of PAL are sound, and that the scheme is capable of effecting a range of benefits for those involved with it. What is less clear however is whether PAL, as widely portrayed in the literature, is in fact the same as that which manifests in reality. Having developed a sound educational basis for PAL and demonstrated its efficacy, it would be of currency now to more attentively explore the processes at work within PAL when it is actually in operation.

When considering the processes at work within PAL the issue at hand should be to consider such questions as: To what extent and how does PAL focus on *understanding* course material and on *strategic* efforts to achieve high marks? How cooperative and discursive *is* PAL? What *does* actually take place in PAL sessions? This study described here aims to investigate the learning environment within PAL sessions in respect of these questions, with a view to better describing its processes of learning, and to provide a more comprehensive model of the learning that takes place in PAL. Observation of PAL sessions, interviews and discussion groups with first year student participants and with PAL Leaders, survey techniques and reflective diaries are used in an attempt to do this. The intention is to examine whether and which particular types of learning occur in PAL as it happens, and to describe how these come about. A consideration of the processes inherent in PAL will, it is proposed, serve three functions: to encourage less presumption about the link between the principles and reality of PAL; to better understand how PAL in actuality works; and in turn to enable a refinement of these processes.

Methodology

PAL at Bournemouth

The study described was undertaken at Bournemouth University, a new university with a strong vocational mission in the South of England, during the academic year 2002/3.

During 2002/3 PAL ran in six of seven academic Schools, on 15 courses (incorporated into 6 'sets' of PAL courses, where first year students shared either all or some course units). PAL was available to c.620 first year students and was facilitated by 34 PAL Leaders, mostly working alone, though sometimes in pairs.

Over the course of the year, PAL ran relatively successfully from an operational point of view on all these courses: attendance, whilst often very variable, was overall above what could have been expected (running at close to 100% for some groups) and all PAL Leaders persisted with the scheme throughout the year (except in two situations unrelated to the PAL scheme). PAL has since expanded in 2003/4 to run with over 80 PAL Leaders supporting around 1400 first year students.

Research questions

The over-arching research questions for this study are:

1. What types of learning interaction take place in PAL sessions?
2. To what extent is learning in PAL focussed on *understanding* course material, and to what extent on *strategic* awareness of assessment criteria?
3. What do PAL Leaders do to bring about different learning interactions, and to create a focus for PAL sessions
4. What do first year students do that influences the character of PAL sessions?

Methods of investigation

Methods of investigation for this study are qualitative and comprised:

- Questionnaire surveys of first year cohorts on those courses for which PAL was available
- Interviews with first year student 'participants'
- Interviews and discussion groups with PAL Leaders
- Reflective diaries kept by PAL Leaders
- Observation of PAL sessions

All methods were used to assess outcomes of PAL (outside the scope of this paper) as well as the questions above.

Questionnaire surveys of first year cohorts on those courses for which PAL was available about the issue of the extent to which PAL is focussed on meaning-oriented work or strategic-oriented work. Also of interest was to ask students about the processes by which outcomes came about - *how* reported benefits were obtained. Students were asked: "If you have been to any PAL sessions, do you agree or disagree that they contributed to the following?" Potential outcomes (of which nine of sixteen are relevant to this study) were listed and respondents asked to rate *strongly disagree, disagree, neither agree nor disagree, agree or strongly agree*.

An attempt was made via this question to assess the type of learning outcome of PAL in relation to Approaches to Studying theory (e.g. Entwistle, 1988, 1997; Entwistle & Ramsden, 1983). This much-cited work suggests that students are

inclined to adopt 'styles' of learning which are "student-dependent" but also "context-dependent". In other words, the learning situation in which students find themselves influences their approach to learning. Learners may adopt: a Meaning-oriented approach (associated with understanding and analytical thinking), a Reproducing approach (associated with memorising and reproducing factual information) or a Strategic approach (associated with recognising and utilising the most effective ways of achieving good grades). The first and last of these correlate with achieving good grades; the Reproducing approach the opposite.

Entwistle's work has been well-tested and used to design other psychometric scales (e.g. Richardson, 1990) and is familiar to many as a satisfactory overview of student behaviour and attitude to study. Thus, its implications have been utilised here to apply some theoretical rigour to the question of what outcomes may be arising from PAL. Although the questions used in this study are derivative it is suggested that they are indicative of the types of approach which may be encouraged by PAL. Table 1 lists items relevant to Approaches to Studying theory included in the questionnaire survey and also includes an item intended to assess cooperativeness of PAL.

Table 1 : Potential benefits of PAL and derivation

"If you have been to any PAL sessions, do you agree or disagree that they contributed to the following?"

Potential outcome	Derivation
1. Opportunity to clarify basic concepts	Meaning-oriented approach *
2. Understanding subject matter of course	Meaning-oriented approach *
3. Awareness of course expectations	Strategic-oriented approach *
4. Better preparation for assignments	Strategic-oriented approach *
5. Opportunity to clarify complex concepts	Meaning-oriented approach *
6. Social aspects of learning (learning with others)	Is the supposed co-operative nature of PAL present and explicitly recognised as being of value by students?
7. Better marks in assignments	Strategic-oriented approach *
8. Development of study skills	Does PAL develop transferable skills?
9. Remembering factual information (e.g. names, dates) [#]	Surface-oriented approach *

* Potential benefits 1,2,3,4,5,7,9 are intended to reflect Approaches to Studying theory (Entwistle, 1997). Item 9 is included as a form of control variable – it is not a stated aim, nor suggested by the evidence, nor, it may be argued, of benefit to students that PAL manifests or encourages a 'surface' approach to learning. Item 5 is intended to represent cooperative learning.

Note – the potential benefits listed are in order of salience of presence as per the results of the survey and not in the order they originally appeared in the questionnaire. Sixteen items appeared in the original questionnaire.

First year students were also asked via the questionnaire the following questions designed to assess perceptions of the value of PAL and processes by which benefits accrued may have come about:

- If you have been to three or more PAL sessions, what has made you keep attending?
- In which other ways have you found PAL to be of value?
- *If* PAL has been helpful for your assignments or other coursework, please describe *how* PAL has been helpful in this way
- *If* PAL has been helpful towards understanding course topics, please describe *how* PAL has been helpful in this way
- *If* PAL has been of value in terms of its social/ group learning format, please describe *how* PAL has been of value in this way
- *If* PAL has been of value in terms of obtaining a second year's perspective on the course, please describe *how* PAL has been of value in this way

Semi-structured **interviews** with first year participants asked an initial opening question: "What has been your experience of PAL this year?" Other questions included on the interview schedule, used where appropriate, included:

How is PAL different from a tutor-led session?
What do you think some of benefits are? How and why do you get these from PAL?
What are some of the downsides to PAL? What do you dislike about PAL?
What makes you decide whether to go or not? Why do you go?
Can you describe what happened in your PAL sessions - from the start through to the end of the year?
Was PAL useful to help with assignments? If so, then how did PAL help in this way?
Was PAL useful to help with understanding the course? If so, then how did PAL help in this way?
Was PAL useful to help with study skills? If so, then how did PAL help in this way?

Semi-structured **interviews** and **discussion groups** with PAL Leaders asked an initial opening question: "What has been your experience of PAL this year?" Other questions included on the interview schedule, used where appropriate, included:

Learning and communication in PAL

How would you describe the typical PAL session?
Can you describe what happened in your best PAL session?
Can you describe what happened in your worst PAL session?
Can you describe how your early sessions went?
How is this different from your more recent sessions?
What sort of things do you discuss in PAL sessions?

The student group

What is your group's attitude to PAL?
What types of things does your group do that helps the PAL session work well?
What types of things does your group do that hinders the PAL session?
How do individuals in the group communicate with one another in PAL?
How do students work in the PAL session, that is different from tutor-led sessions?
What do you think students gain from PAL sessions?
What do you think students dislike about PAL sessions?
How has the character of your PAL sessions changed since you started? How has PAL changed from the start of the year to now?

Managing the group

Describe how you manage the PAL group
Do you have any particular techniques or strategies for managing PAL?
What have you done that has helped lead to effective PAL sessions?
What have you tried that has not worked?
What other good experiences or difficulties have you experienced in running PAL?
How does your perception of PAL differ now from before you began as a PAL Leader?

Operational

What about the way PAL is set up within the course helps it work well?
How have you made use of suggestions or materials provided by staff?
What developments would you like to see in the future to help PAL work better?
What advice would you give us to help PAL run well in the future?

Extracts from **reflective diaries** written by PAL Leaders are used in this study where relevant to explanation of types of learning and learning behaviour taking place in PAL sessions.

Observation of PAL sessions by PAL co-ordinators has been used to describe character of learning taking place in those sessions observed.

Results: *First year participant survey questionnaire*

Results of the section of the questionnaire intended to assess the character of learning outcomes of PAL as perceived by first year students are shown in figure 1. 230 respondents completed this section of the questionnaire (37% of total cohort for whom PAL available, and representing all courses on which PAL ran).

The two highest ranked outcomes for PAL, which students either agreed or strongly agreed PAL sessions contributed to, were 'opportunity to clarify basic concepts' (88% (strongly) agree vs. 7% (strongly) disagree) and 'understanding subject matter of course' (80% vs. 8%). Both of these items are intended to represent a meaning-oriented approach to learning. Strategic-oriented items were also highly-ranked, with 'awareness of course expectations' (65% vs. 16%) and 'better preparation for assignments' (64% vs. 17%) highly ranked by students. 'Opportunity to clarify complex concepts', a meaning-oriented item was scored at 58% vs. 19%, 'Social aspects of learning (learning with others)', indicating presence of cooperative learning was scored at 56% vs. 22%, 'better marks in assignments', a strategic-oriented approach was scored at 44% vs. 22%, 'development of study skills' was scored at 28% vs. 45%, and 'remembering factual information' was scored at 20% vs. 50%.

These results indicate a higher prevalence of meaning-oriented outcomes arising from PAL than strategic-oriented outcomes, although both feature highly. Over half of all students considered PAL contributed to social aspects of learning, with only just over a quarter considering PAL contributed to a development of study skills.

Other analysis not included here has also found this scale remarkably consistent between course cohorts, indicating reliability.

Figure 1 : Outcomes of PAL sessions as perceived by first years
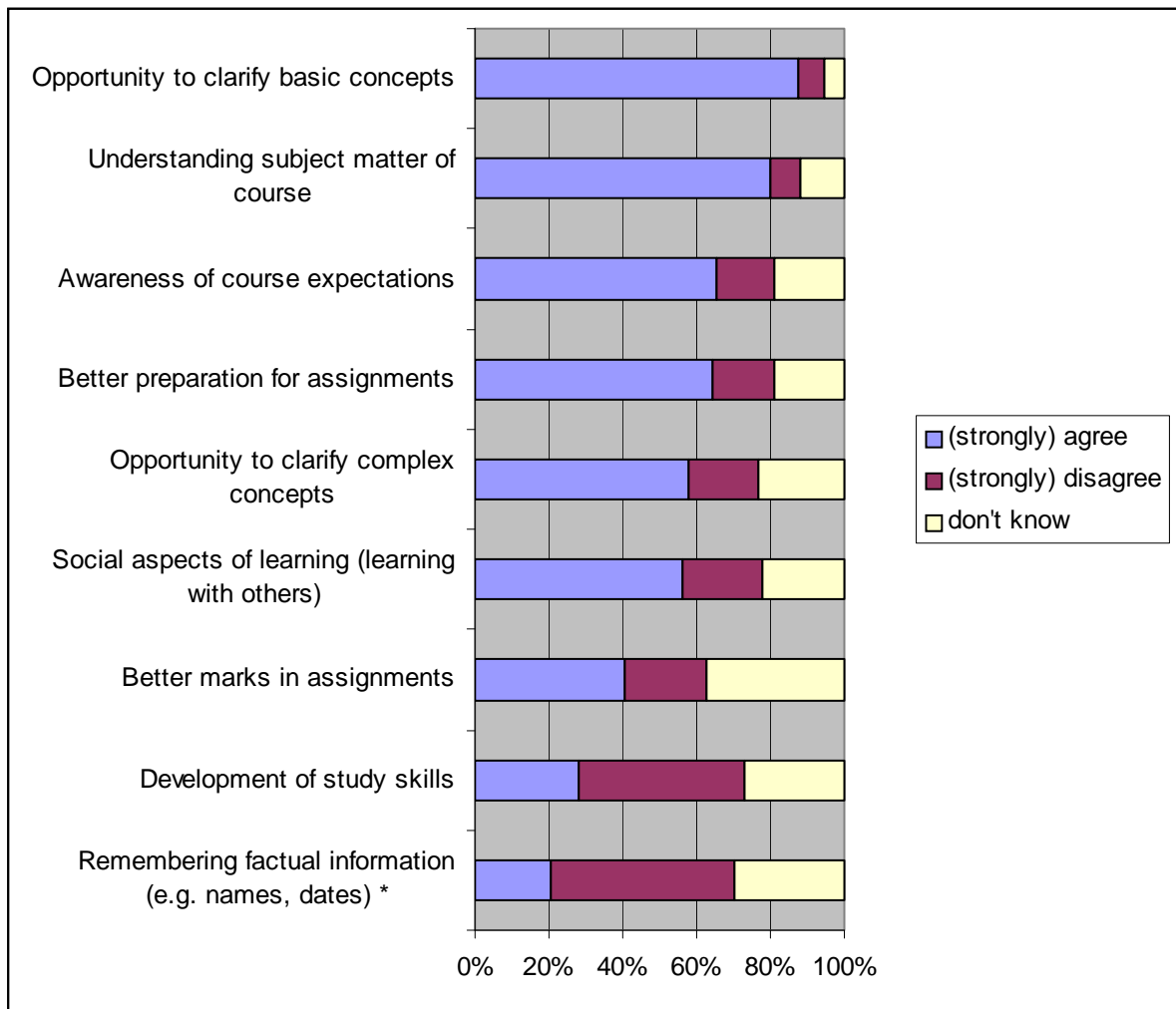
* It should be noted that the 'control' question – that asked about remembering factual information – has in fact a very low acceptance rate by students.

Types of responses to the question 'If you have been to three or more PAL sessions, what has made you keep attending?' or 'In which other ways have you found PAL to be of value?' which may be considered relevant to this study (i.e. focussed on character of learning and processes rather than, for example, usefulness of PAL in adjusting to university) are given below together with illustrative quotes.

Meaning-oriented responses

Whilst many responses from students were ambiguous for their brevity, there is evidence of meaning-oriented approach present in PAL. This may occur in relation to a student-centred perspective:

> "Helps to explain the basics from a student's view"
> "Helped to strengthen my knowledge and understanding of subjects in a friendly atmosphere"
> "Extra support… such as clarifying specific points that lecturers might not explain well"
> "Helps when we didn't understand a thing taught in seminars"
> "Reassurance and help on current subject problems without having to go direct to the lecturer"

Other more general remarks made which appear to indicate meaning-oriented work in PAL include:

> "Useful… when they explain stuff I didn't understand in class"
> "Very helpful. Helps in understanding or verifying any unclear topics in the subject"
> "Not understanding certain aspects of the course - helps develop"
> "Useful to help understanding"
> "Gives me the opportunity to ask specific questions on all subjects"
> "Review of classwork - resolving problems I/ others have"
> "Helpful for understanding course subject matter"
> "Helps in understanding difficult topics"
> "More programming knowledge"
> "It's useful for furthering my learning"
> "Helps with difficult sections of course e.g. normalisation"
> "I have found PAL sessions very helpful for me to understand my course properly"
> "Helps with problem subjects"
> "Helps with learning key concepts"

Strategic-oriented responses

Focus on assessed work and university expectations is also a focus for students in PAL. This may occur in relation to generic issues such as how to structure work, or reference reports:

> "Got a good idea about how to tackle assignments, what's important in them, gave me ideas on what to do and what's expected, very effective, taught useful study skills"
> "See how you should structure work - what goes in the beginning, middle and end and how you should write this up"
> "Helps with seeing what is expected of you and how seriously you should take university"
> "Knowing what is expected in 2nd and 3rd years as well as what we will be doing"
> "Able to discuss assignment approaches and helps with test revision"
> "Better understanding of assignment expectations"

PAL has also focussed on material and approaches specific to particular assignments:

"Useful especially when [PAL sessions] concentrate on specific assignment questions…"
"There is always something you come away with that you hadn't thought of i.e. brainstorming for an assignment"

Comments were made specifically in relation to increasing achievement:

"The need to improve my marks"
"Because I find it hard to do coursework this gives a chance to improve marks"
"Basically went when needed help with assignments which helped me pass them"

PAL Leaders' knowledge and experience were also drawn upon to assist with assessed work, including, perhaps somewhat worryingly, utilising their previous work:

"[PAL Leaders] offering a copy of the assignments they did in their first year, to see what is expected."
"Support and help offered by Leaders on assignments"
"PAL Leader brings in first year assignments so we can have a better idea of what is expected of them"

The PAL Leader was also able to take a more detached role according to one student:

"If we had nothing to discuss we could use the time to work on assignments and the PAL Leader would be there to help if needed"

Examples of other general remarks made were:

"Good to get tips on assignments"
"I find them very useful in helping me with my work assignments"
"I found I can ask many questions and know how to deal with assignments"
"You can pick up helpful hints about assignments"
"Going over relevant topics which helps with assignments"
"Extremely helpful for assignments"

Co-operative learning

Whilst the co-operative aspects of PAL may in many instances be taken for granted - in the same way that a student is unlikely in describing the usefulness of a lecture to refer to its didactic character - students have referred to co-operative aspects of PAL. Some comments referred to interactivity or the sharing of ideas:

"It was very interactive and [the PAL Leader] reinforced what the lecturers had said, but from a different perspective"
"Students in PAL can share their ideas and experiences"
"Meeting up with group members to discuss [subject area] and getting ideas for it"
"To integrate and participate with fellow students"
"Sharing ideas"
"Helps to have the perspective of other students"
"Interpersonal group relations"
"Good place to air problems so class can discuss as well as lecturer/ PAL Leader"
"Helps to discuss what is going on in the course"
"Help with gelling of our seminar group and able to use their ideas"
"Working together with seminar group"
"Enables you to get to know your seminar group better because you help each other"

Direction from PAL Leaders

PAL Leaders are referred to in respect of their being able to offer their perspective. This may offer a reassuring function:

> "[PAL Leader] helps with whatever problems I am having"
> "Assurance that this student has done what you are doing and therefore can help you"

PAL Leaders may also be able to offer advice specific to course material or more generally about how to 'survive' the year:

> "I can ask questions to a person that has already been through the first year"
> "The fact that we could just talk to [PAL Leader] about our work and everything. Also asking her questions and she answers in a student perspective."
> "We get the inside facts from someone who's done it"
> "If we had any concerns about work the PAL Leader will go away and read up on it and then get back to us"
> "Can ask questions and get another more experienced student's point of view"
> "Knowledge from second years"

Types of responses to the questions asking by what means benefits of PAL emerged are given below with illustrative quotes. Questions asked were as follows (numbered for cross-referencing with quotes):

1. *If* PAL has been helpful for your assignments or other coursework, please describe *how* PAL has been helpful in this way
2. *If* PAL has been helpful towards understanding course topics, please describe *how* PAL has been helpful in this way
3. *If* PAL has been of value in terms of its social/ group learning format, please describe *how* PAL has been of value in this way
4. *If* PAL has been of value in terms of obtaining a second year's perspective on the course, please describe *how* PAL has been of value in this way

Meaning-oriented responses

Concepts may be discussed in PAL to enhance understanding of difficult or not easily understood topics, and to support teaching, as well as in reference to assessed work:

> "Clarifying certain difficult topics from the course" (1)
> "Helps with understanding confusing concepts" (1)
> "Going over points from lectures and seminars that are not clear" (2)
> "The PAL Leader has asked lecturers for some advice on how to help us with seminar preparation so things we do in seminars can be gone over in PAL" (2)
> "Sometimes it is not easy to understand from lecturers so we can go over a particular subject until we do" (2)
> "Going over specific things that I didn't understand and describing them in a simpler way" (2)
> "We went through subjects that we identified as problem areas" (2)
> "We went through the hard parts of the course like data-flow diagrams and pseudo-code"
> "PAL sessions allow more time to back-track on topics that may have proved difficult" (2)
> "Clarifying basic concepts from the course, especially during assignments" (1)

Attention to understanding course topics is also referred to specifically in relation to the cooperative character of PAL:

> "Everyone's views on topics are discussed to help give an overall viewpoint and understanding" (2)
> "Clarified my understanding with other course-mates" (2)
> "We were encouraged to explain concepts to fellow students" (3)

Strategic-oriented responses

PAL may be used to support assessed work generically or generally:

> "Help on third person writing and referencing" (1)
> "Explained the meaning of the task, helped with structure and presentation" (1)
> "Gives examples of what is needed for assignments: books etc." (1)
> "I have been able to clear up any problems with my assignment work before handing them in" (1)

Clarification of assessment requirements also emerges as a feature of PAL:

> "Tells us what is expected, how to get the most marks etc." (1)
> "Helped give a better understanding of what was being asked of us" (1)
> "Clarifies what is expected, discusses different approaches to assignments" (1)
> "How lecturers mark assignments e.g. marking criteria" (4)
> "Helped us to understand what teachers want from us" (4)

The PAL Leader has also played a role in advising students about assignments:

> "PAL Leader gives us tips and advice on how to conduct and set out an assignment" (1)
> "[PAL Leaders] have told us exactly what we have needed to do and how we are to achieve it" (1)
> "Showing us their former [assignment] for ideas on how to layout and present" (1)

Co-operative learning

The cooperative features of PAL are reported in the context of its informal, open environment:

> "PAL has a laid-back, democratic atmosphere" (3)
> "A chance to spend time with the whole group in a less formal situation than seminars" (3)
> "Allows the seminar group to meet on a less formal basis whilst still at uni" (3)

Reciprocity is also referred to by students:

> "It helps to revise in a group in the PAL session because everyone can help each other" (2)
> "It helps to be with members of the group that are having problems with work, when this explained, it can help you understand. Also you may be able to tell group members how to do things they are struggling with" (3)
> "If someone in the group knows the answer they help other students" (3)

The role of the PAL Leader in enabling cooperative learning is mentioned:

"The PAL Leader didn't do our assignments for us, he instead cultivated our answers" (1)

"The PAL person always gets us to join in and bond together" (3)

"We were encouraged to explain concepts to fellow students" (3) [quote repeated from above]

Other illustrative quotes regarding the cooperative aspects of PAL are:

"PAL is a good opportunity for students to discuss problems or find out about the course" (2)

"Clarified my understanding with other course-mates" (2) [quote repeated from above]

"You may get answers to questions you were afraid to ask, as others may ask the questions" (3)

"Ideas can be bounced around the group stimulating the learning experience" (3)

"Easier to talk with other group members; in PAL situation you gain others' perspective, ideas you may not have thought of"

"A good opportunity for students to interact with each other" (3)

Direction from PAL Leaders

The PAL Leader is reported at times as giving some direction on course matters to students:

"He gives us layouts, pointers and general info - it all helps but it's not spoon-feeding" (1)

"PAL Leader briefly describing the topic and then asking everyone what particular areas they struggle with and then advising" (1)

"The PAL Leader will go through examples step-by-step giving examples where appropriate"

"The second year student explains the topic better (i.e. basic)" (2)

"A number of us have had difficulties with programming and the PAL Leader has explained these further"

"Sometimes a student explains the topic better than the lecturer, in terms of language used" (2) [perhaps referring to PAL Leader]

The notion of the PAL Leader's perspective and being able to benefit from their experience is reported:

"Get a perspective of someone who has already done it" (2)

"It helps being able to get advice from someone that has done the course and the work involved - how best to go about doing the work" (4)

"PAL Leader described own experiences and helped us to improve on his/her mistakes and use their experience" (4)

Results: *Interviews and discussion groups with first year participants*

Ten interviews were conducted with first year participants of PAL.

Comments pertaining to cooperative vs. directional aspects of PAL

The PAL Leader was referred to by first years in terms of their role in facilitating, generating and managing discussion:

> "[The PAL Leaders] sort of asked us to think about it and discuss it and then come back to them with what we'd found and they'd reinforce it but a lot of the time they'd just agree with what we'd said rather than add to it"

> "When we had different essay questions that we wanted to do they would put us in groups to discuss them, which was good because not one question dominated then"

> "They said the best thing is to maybe split yourself up into smaller groups and discuss one person thinks about one area and another person thinks about another area and then come all back together so yeah they helped us a great deal with working together"

> "They just helped us to discuss them as a group, they didn't really do anything, they didn't tell us the answers or anything they just got us to actually talk to each other about the problems we had as opposed to just sitting on our own and thinking about them which is definitely very useful"

> "They started off by saying 'well we thought this this and this, maybe it's not right but this is what we thought' and then other people contributed what they had and then the people that were more, say, business oriented or computing oriented, then brought in their point of view as well"

> "What they did then is say 'well we had this problem last year with the database we had this this and this problem have you got any of these problems?' and everyone was like 'yeah yeah we've got all those problems' so yeah definitely ways to get people saying…"

> "We did interact as a group and [the PAL Leader] would sit there and supervise. I knew a lot about rich pictures and my friend didn't so I would explain to her and look at [the PAL Leader] and he'd say whether it's right. So he was always there checking we are telling each other the right thing. If there was something you didn't know he could jump in and say…"

PAL Leaders would also at times take an approach more directly advising students on course material or other matters:

> "I think if we're missing something then yes they can give us help, if they know something that we don't then they can help us"

> "[The PAL Leader] comes across really warm and if you don't understand something he won't come across all 'I won't teach it to you' he'll try to make it as simple as possible and that's what I liked, compared to the lecturers who are technical, they know what they're on about, we don't, [PAL Leader name] being a second year he obviously knew what it was like to not know what they're on about either, so it was nice for him to explain how he would understand so we would understand"

> "I think that our year relied on PAL Leaders far too much – they're just there for support and not to answer all your questions"

> "[The PAL Leader] went through what it needs to look like, showed us on the board, like you need to have this with this and then linked it to context diagrams. So even though the lecturers probably went over things, either we didn't listen or we still didn't get them and then he clarified them, like you need to link this with this, what might seem on the surface to be unrelated subjects and he linked things together. Things in different units didn't always seem related but he helped to show me the linkages."

> "The lectures and the seminars gives you the content, gives you what you need to know, but then if there's anything you don't understand you can run through it in PAL and it makes it all make sense because you can't get the sort of content you'd get from lectures in PAL because basically they're not experienced as the lecturers but… if you've got somebody the same age they can put it in a way that you understand more and help it all come together"

> "I don't think it is the case that the people who go to PAL are more studious, it's not as simple as that. Some people go just to ask [the PAL Leader], for him to answer their questions, to get all the answers, and also some people go to get a different perspective on what they're learning"

Students also however pointed out at times that PAL Leaders were aiming to NOT teach or over-direct their group (to the disappointment of some):

> "It was good the way [the PAL Leader] came across not as like the lecturers, teaching teaching teaching, read this read this read this, he showed us the other side to university life, and that doesn't come up anywhere else on the course"

> "[The PAL Leader] did allow us to chat and when he asked a question we'd all sit and listen, but I think there should have been more of a teaching structure like lecturers have through the year – it was basically about what we wanted to know, I would prefer it if he had taught us"

> "Sometimes when we asked [the PAL Leader] questions we expected him to know everything because he was a PAL Leader and when he said, I don't know about that go and see your lecturer, no one realised at first, we expected him to be the 100% first student and know everything…"

> "Our PAL Leader helped clarify things, what are going to be the answers to these things, and yeah, he did coax a lot of things out of us, he didn't just give it to us, he'd ask what does that mean? In a way he did play stupid to help us get the answers, because it's always more satisfying when you get the answer yourself."

The interactive, discursive character of PAL was also emphasised by students:

> "The important thing about PAL is that it gives the opportunity for students to talk to other students, personally that's the only way I learn is through talking to other people, and I think seminars and lectures you have to keep your mouth shut mostly, and in PAL you encourage people to have the confidence to speak, expressing your point of view on a subject and that might get the rest of the class thinking, or saying [what they believe]"

> "When all the first years are talking that's of benefit because that stops the PAL Leader imposing their opinions or views"

> "When I was unsure say about how to solve a certain problem when you go to PAL you realise that everyone has got the same problem as you so it helps to discuss it with other people and then actually solve the problem"

> "Everybody chipped in with their ideas, some obviously as well had the wrong point but everybody… it was like a big forum for ideas"

"[In PAL] you can knock ideas around, you could have an amazing assignment [written] and you've got all the points in your head but then somebody just chirps in with one idea and you think 'that really makes sense' and it brings it all together kind of thing"

Comments pertaining to meaning-oriented vs. strategic-oriented aspects of PAL

The role of the PAL Leader in helping prepare for assignments was commented upon, where PAL Leaders could either suggest ideas for the work or pass on advice from experience:

"PAL was useful… when we had essays coming up they would go through it with you and give you ideas and themes and what you need to learn"

"It was actually when we started doing the coursework that it actually helped us a lot because we could ask someone who's done maybe not exactly the same course but had done something very similar units and ask them what problems they had and then sort of being able to talk to them and see how they could maybe help us solve the problem that was very useful"

Being able to better understand assessment requirements was a feature of PAL:

"PAL helped with assignments, knowing what sort of standards and what the lecturers were expecting us to deliver to them at the end"

One comment refers to how attendance at PAL was effectively *negatively* correlated with assignment demands for some, though used by others as a method of preparing for assignments. (This point is also made by PAL Leaders, below):

"I think attendance fell off when we started getting assignments. We didn't have any that needed to be in for months but when deadlines came up people maybe did their assignments instead [of going to PAL]. But also for some assignments people went along to PAL to get those done."

A shift through the year from what may have been a more meaning-oriented approach to one more focussed on assignments is referred to:

"Early on PAL was about emphasising points of lectures to a certain extent but not actually going over what happened last week in a lecture, but later was more emphasised on coursework"

Understanding course material, apparently separately from assessed work, was a feature of PAL, whether reviewing taught materials or laying to rest confusion:

"It was good to be able to look at what you'd done in lectures again, and make sure you understand it and you've got it right"

"We'd go through what we'd been taught, doing examples of problems or just having another look at it until we'd got it"

"Because I hadn't done the subject [at A-level] it was all like a lot of this is going over my head and I found it made me a lot less stressed, being able to figure out what was going on and tie it all together"

"The [legal terminology] did come up a lot in PAL because people get confused and they need to understand the difference between what's important and relevant and what's persuasive or not a set rule"

Results: *Interviews and discussion groups with PAL Leaders*

Six discussion groups were conducted with groups of PAL Leaders.

Comments pertaining to cooperative vs. directional aspects of PAL

It is perhaps somewhat self-evident, but worth noting that interaction and cooperation were greater with larger numbers of students present in class:

> "Before [when attendance was higher] we had more interaction, more input from them, but it's more of a personal tutorial now whereas when there was fifteen students there was a dialogue or a debate sometimes"

> "There's always interaction but there's much more of it when there's fifteen of them than when there's just two or three or four"

PAL Leaders spoke about their own techniques in engendering cooperative sessions. This may take the form of allowing discussion among the student group to run its own course as much as possible, stepping in where necessary or appropriate:

> "We don't restrict the conversation we just let them talk and if they run out of ideas we just throw in our ideas and they talk about that"

> "We say 'how much do you know' and we write it all up, we don't input that much and when we've got all that they know we go onto the question and… that's when all the ideas start coming out"

> "It's knowing how far to take yourself, you can't obviously give them the answers but you have to encourage their understanding and discussion is a big part in respect of if you can get a group together that's going to talk then they'll gain more understanding from each other regarding a certain topic or case"

> "I still feel part of it but I think it's a good thing to feel redundant because that means they're helping each other so sometimes I do but that's a good thing, I might sit at the back and if they've got a problem they can ask me"

> "My group's really good, they all get stuck in and help each other, I don't need to teach them, I just try and help keep it chugging along"

> "I just try and start them off, get them going with it, if they've got a problem just – they kind of do know it but they don't realise – at one point there was quite a simple question about what a datatype was and they knew what it was they just needed an example of an answer and again we didn't answer the question we gave them an example and then they could go on and answer the rest of the question"

> "Most of our group are pretty confident, they all work as a group well they all know each other well and it's quite a large group"

> "There's this one girl [first year student] she's amazing, she dominates, she rallies them all up, and whatever she wants to do gets done, what she says just goes"

PAL Leaders may at times also give more structured direction to enable purposeful discussion and work to take place:

> "We give them tasks to do, it makes them work a little bit more because otherwise it gets like one-to-one tutorials"

"When they haven't done their research we have a brainstorm and then we find out what they know and so from there we point them towards where they *should* do their research because often the reason they haven't done their research is because they don't know where to start"

"Through PAL we bring them together and we force them to talk about one essay question so they can talk about the problem and make sure they all understand it perfectly and understand how to answer it and they all benefit from each other's knowledge and each other's understanding"

"An important effect of PAL is to encourage people to be more cooperative and work together"

"I do small group work and sometimes get them to do role play, I just try not to write anything on the board, if one of them can write it and luckily everyone in my group that turns up is willing to get on with it and they have a fair amount of knowledge anyway"

"I use groupwork and discussions and writing on the board and getting them active gets them thinking more and having go's and sharing their ideas"

"It depends on the content of the sessions – tackling an assignment can take a scatter approach – you get them thinking around the area and once they've done all that you start pulling the links between various elements or you can get them working and just putting up on the board what they know, then you get the whole group's knowledge up there on the board for everybody"

"PAL is good for groupwork, brainstorming ideas, maybe assignments, can sit there and make decisions and get discussions going and different opinions"

"We don't *give* them anything but they come with questions and then we talk about what they're worried about or unsure about"

PAL Leaders have reported that as the year progresses, their sessions tend to become less formal and more participative:

"Mine's become more informal… I felt even at Christmas they still looked at me very much as a teacher and wanted the answer from me all the time, but, I tend to sit with them or on a table by them, and they would still throw questions at me but I think it made it more informal and now they've become more relaxed and they see me more as a student rather than as a teacher and they don't ask me specific questions as much. They know that they are trying to get the answers and learn from each other"

"You get to know people more and get more relaxed, but you still get some people which want instruction, they go and there, you get the ones that you can tell want to be there and want to join in the discussions"

Despite often reporting success or luck with a cooperative environment emerging in PAL sessions, PAL Leaders do also report difficulties achieving this:

"Sometimes you stand there and you try but it's just dire, no one says anything… not good"

PAL Leader 1: "you go in and say what do you want to do they're always going to turn round and say 'oh, dunno, nothing'"

PAL Leader 2: "The trouble is that's almost going to the point of teaching because it's like you're saying 'right we're going to do this' but PAL is supposed to be them actually saying what they want to do"

> "Some of them are still coming along thinking we're the teacher they're the student therefore we're in charge but it's the opposite way round really, they're actually in charge of the session but there's something subconscious that they're thinking that 'we can't say anything, he's got to tell us' sort of thing"

> "I don't know if they *want* you to tell them the answer but they expect you to tell them, is a better way to put it, they come along expecting to be told what they have to do so if they come along with a question sometimes they're a bit thrown if you start throwing a question back at them in different ways, if you ask them a question to direct them to the answer they get a bit thrown by it"

> "Some of them get annoyed at the fact that we don't teach them, they want an answer and you don't give it to them and they don't see the point of PAL sessions "

> "When I was getting trained I was thinking well what is the point if you're not getting taught, I think it all depends on the technique if you can get it right…"

> "They're so used to being given the answers that when they come here they expect that to continue and it doesn't, they need to start thinking, we'd all love that but it's not going to happen"

> "The people who are difficult and don't want to participate just don't turn up any more"

> "In the larger groups there have been some people who have been really lovely and quite sympathetic and willing to talk and chat which makes you feel more at ease but then there have been people who just sit there with a negative attitude like 'why do I have to be here' sort of thing"

> "There still seems to be a lot of schoolgirl/schoolboy mentality like 'you're the teacher I'm not going to help you' sort of thing and it really didn't help me to help them"

Perhaps unsurprisingly, given dissatisfaction with and misconceptions about the intended participative nature of PAL from some students, PAL Leaders do find themselves drawn at times to providing 'answers':

> "I don't think we've ever been successful like that in having the opportunity to sit back and let them get on with it, I find it sometimes difficult not just to tell them the answer, I find it really difficult actually because sometimes they've just got no idea"

> "Sometimes I just find I have to tell them, I know it's not the point of it but otherwise… thing is with our course is it's problem solving…"

Comments pertaining to meaning-oriented vs. strategic-oriented aspects of PAL

PAL sessions may focus on generic skills for succeeding:

> "We did a PAL session on time management, telling them different techniques like how and when to start doing research, when to start writing their essay, giving themselves time at the end to correct it, the usual stuff but it's good because they had quite a few questions about that"

PAL sessions also focus on assignment content, assessment criteria, and attending to immediate academic needs:

> "They've really appreciated coming to us for essays and getting an idea of what you need to put in each essay"

> "I think it's quite helpful for them in terms of how to write and they often say about when they've got problems with… a particular assignment… and we've made them mark each others to see where they're going wrong"

> "Apart from general things about study skills we've been careful to always devote part of the session to something that's directed to course content to keep them coming because that's what they really want"

> "It tends to be assignments that are coming up normally we look at assignments which are due in the next week and alright they should have done a lot of research by then anyway so in a way they come to PAL sessions to get that kick up the backside and push in the right direction"

Students have also appeared keen to ask PAL Leaders about future directions of the course and university life:

> "We had a good chat last time about where it goes in the second year because when you're in the first year you can't really see that far"

"Now they're asking questions more, now I find they're asking a lot of questions, mine at the moment are asking questions about the second year, what modules are different, what the exams are like, do we have the same lecturers, housing issues"

Results: *Reflective diaries kept by PAL Leaders*

Comments pertaining to cooperative vs. directional aspects of PAL

Many comments in PAL Leaders' reflective diaries were concerned with level of participation:

> "Good interaction between Leader and students"
> "Good group interaction - all of group participated well in the discussion"
> "This week's session was very productive with lots of topics covered well, with the group participating and getting something from the session"
> "There was positive interaction between the group, discussion was created"
> "Everyone participated. It helped them because we looked at a current example."
> "The group now get on well together and are willing to communicate their ideas"
> "Communication was strong and they have growing confidence about Chemistry exam; group were freely sharing information and ideas"
> "Several students were prepared to answer and make constructive comments"
> "The group actively discussed content of lab book"
> "Very communicative, much was covered - one student was quite reserved but eventually managed to bring him into the conversation. A very good session - by the end they were all contributing to the answers"

PAL Leaders also referred to their own role in encouraging participation, through such techniques as maintaining a relaxed atmosphere, asking questions of the group, helping students to answer their own questions, creating appropriate expectations about PAL:

> "I was in control of the session but not overpowering i.e. keeping a relaxed atmosphere"
> "I felt I successfully pointed them in the right direction to an answer rather than directly giving them an answer"
> "Got a good response from the group with questions I asked"
> "Managed to get responses from all around the group by asking if anyone knows the answer to other people's questions"
> "Session went well - they helped each other with questions and were able to learn and explain concepts to one another"
> "I think the atmosphere and the group's willingness to participate made the session run well. I think I have got across to them that PAL is not a teaching session by me but more helping each other."
> "Needed to lead them from the front - redirecting questions and answers"

This may not always be easy to achieve, however:

> "I would have liked people to participate more. Tended to be one group and a few comments from others when I directed more to them."
> "Sometimes there are people that don't say anything or participate"

Comments pertaining to meaning-oriented vs. strategic-oriented aspects of PAL

Two remarks made which are telling for the apparently contradictory attitude present between different PAL groups were:

> "Only a couple in today - everyone is busy with assignments and so they had to prioritise this"
> "Good turnout last couple weeks because two reports due in by end of month"

This sums up two contrasting types of approach of students towards PAL: that it can be used as an opportunity to prepare for assessed work, or that it is apparently detached from the process of completion of assessed work.

Further quotes from PAL Leaders sum up these differing approaches:

> "I went through what they should be looking for in an assignment. I also got them to define terms in the assignment and went through what sort of layout to use."
> "General discussion - shared ideas on what they feel is necessary to achieve in the exam"
> "Discussed concepts covered so far in 'Atmospheres and Oceans' - helped students to become more familiar with the key concepts and the vocabulary they have been taught so far"
> "[Student name] said she got a lot out of the session and felt more confident about statistics"

Results: *Observations of PAL sessions*

Six PAL sessions observed by PAL co-ordinators are described here which illustrate different methods used by PAL Leaders, different types of interaction within the PAL session, and attendance to both strategic and meaning-oriented aspects in PAL.
Observation 1 attended to generic strategic aspects by using an exercise that asked students to think about assessment requirements. This was followed by open discussion of course subject matter.
Observations 2 and 3 used a simple exercise (quiz) to encouraged a lively discussion and attention to course subject matter.
Observation 4 used an exercise to develop presentation skills and review course material.
Observations 5 and 6 focussed on assessed work, but largely through discussion of course subject matter relevant to it.

No. first years present: 7

No. PAL Leaders: 1

Course: Communication (Media School)

Subject matter of session:

- Essay writing activity: The PAL Leader used 2 sample essays, distributed during her follow-up training, to engage in an essay marking activity. Used this as a basis to discuss the main ideas behind analysing an essay question, structuring an essay, using research and evidence appropriately, and the purposes of the introduction, conclusion and bibliographic citations.
- Points made were reinforced by reference to academic writing style and related to an essay students had recently been given for the unit "Media and Society".
- The PAL Leader then gave out copies of several different newspapers and, during the last 15 minutes of the session, a lively discussion took place in which the students compared and contrasted the ways in which a particular issue was reported in different tabloid and broadsheet newspapers.

Activities used:

- There was a lot of open but thoughtful discussion.

Role taken by PAL Leader:

- The Leader was able to both engage in and lead the discussion. She would be best described as *primus inter pares*

Description of interaction:

- Almost all students engaged freely in the discussion that was not only between Leader and students, but also student to student.
- The Leader also took time to gently draw a shy international student into the discussion..

To what extent and how did the session focus on *understanding* course subject matter?

- The Newspaper activity gave students a good opportunity to look for and discuss practical examples of theoretical ideas.

To what extent and how did the session focus on *strategic* aspects e.g. assessment requirements?

- The essay writing activity explored elements of academic writing within the context of a specific essay-type assignment.

No. first years present: 8 – it is interesting to note that there were only 4 students in the room at the start of the session, but those that were there 'phoned around other members of the group to encourage them to attend

No. PAL Leaders: 2

Course: Law

Subject matter of session:

- Revision of topics covered in Contract Law

Activities used:

- Quiz intended to review what had been covered in Law of Contract over the whole of the Autumn Term

Role taken by PAL Leader:

- The Leaders had pre-prepared the questions and put them onto an overhead transparency. One asked the questions and the other Leader kept the score.

Description of interaction:

- Interaction was structured and very well organised. Each team had 4 members and each member took turns answering questions.   Other members of the team could add to the first answer given. Finally, if an answer was incomplete, members of the other team were invited to add further information.

To what extent and how did the session focus on *understanding* course subject matter?

- Students articulated answers to questions in their own words without recourse to their notes and, where relevant, were asked to name and outline the case on which the law was based.

To what extent and how did the session focus on *strategic* aspects e.g. assessment requirements?

- Strategic aspects were not covered.

No. first years present: 15

No. PAL Leaders: 1

Course: Law

Subject matter of session:

- Revision of topics covered in Law course as a whole

Activities used:

- Quiz intended to review what had been covered over the whole of the Autumn Term

Role taken by PAL Leader:

- The Leader took the role of organiser and quiz-master

Description of interaction:

- The class were asked individually to write down two questions to contribute to the quiz, relating to anything they had been taught over the term
- The class were then divided into two teams, members arbitrarily decided by the PAL Leader
- The Leader then ran the session along the lines of a 'pub quiz', asking questions to which each team had to decide the answers
- When it appeared in one team that one or two students were coming up with all the answers the Leader addressed this by encouraging all students to contribute. In part this was achieved by getting students to refer to notes and textbooks
- After twenty questions the Leader went back through requesting answers - she awarded a point based on the answers she considered best: this resulted in good-humoured disagreements about which team knew their Law best
- The winning team won a box of chocolates

To what extent and how did the session focus on *understanding* course subject matter?

- Students articulated answers to questions in their own words - mostly questions were related to legal concepts, statutes or cases

To what extent and how did the session focus on *strategic* aspects e.g. assessment requirements?

- Strategic aspects were not covered.

Observation 4

No. first years present: 18

No. PAL Leaders: 2

Course: Business Studies

Subject matter of session:

- Revision of topics and presentation skills

Activities used:

- Small group, informal presentations and open discussion

Role taken by PAL Leader:

- The Leaders instructed students as to which presentation topic to speak on and organised class activity

Description of interaction:

- The Leaders had pre-determined subjects on which the class were to deliver presentations
- The class was split into small groups and given a topic (relating to website design)
- Each group had five minutes to prepare a presentation (some used write-on acetates) and then two or three minutes to deliver it
- After each presentation each group was applauded; the class was asked to say some positive things about the presentation and then some ways it could have been improved
- Interaction was very good-humoured

To what extent and how did the session focus on *understanding* course subject matter?

- The content of presentations was designed to review subject areas of the course

To what extent and how did the session focus on *strategic* aspects e.g. assessment requirements?

- The activity and subsequent discussion was designed also to practise and develop presentation skills

No. first years present: 7

No. PAL Leaders: 1

Course: Environmental Science students

Subject matter of session:

- Revision of topics and preparation for seminars

Activities used:

- Informal, open discussion

Role taken by PAL Leader:

- The Leader joined in discussion at a similar level as students but also asked open questions to elicit information and offered her opinion on answers at times

Description of interaction:

- Students mainly attended to seminar worksheets - short-answer questions which required knowledge of Chemistry (such as balancing equations)

To what extent and how did the session focus on *understanding* course subject matter?

- The discussion was focussed upon Chemistry equations

To what extent and how did the session focus on *strategic* aspects e.g. assessment requirements?

- The discussion was also strategic, in that worksheets are seen as required work and are representative of questions asked in end-of-year exams

No. first years present: 10

No. PAL Leaders: 1

Course: Hospitality common first year

Subject matter of session:

- Assignment preparation

Activities used:

- Informal, open discussion

Role taken by PAL Leader:

- The Leader joined in discussion at a similar level as students but also advised on content and structure of assignment

Description of interaction:

- The class had an informal discussion at the start regarding social activities and progress of practical work as required by the course
- Interaction was mainly question and answer from first year students to PAL Leader. There was some student to student interaction but this was minimal.

To what extent and how did the session focus on *understanding* course subject matter?

- Subject matter was attended to where relevant to the completion of the assignment

To what extent and how did the session focus on *strategic* aspects e.g. assessment requirements?

- The PAL Leader offered advice on what he felt teaching staff wanted from the assignment.

Models of the learning environment of PAL sessions

Based on the types of responses from students and observations of PAL sessions, an attempt is made here to describe the types of PAL sessions, and learning behaviour that may take place in them.

Two models are presented here of the learning environment of PAL sessions, the first based on types of interaction that may occur in PAL sessions, the second combining variance in interaction with the types of learning approach that may form the focus of PAL sessions.

Interaction in PAL sessions

The results of this study suggest a hierarchy of sorts of interaction present in PAL sessions. This ranges from PAL sessions where the PAL Leader is detached from their students (and where in effect little interaction is occurring) through to the idealised PAL session where students are interacting with students and the PAL Leader is able to behave as a participant in much the same way as their students. Table 2 shows a hierarchy of interaction in PAL sessions, and following this some quotes and remarks from students are referred back to, in illustration of the types of interaction in PAL proposed. In practice, any one PAL session may operate at a number of levels. It is suggested that, broadly speaking, the higher the level (i.e. the higher the number) as referred to here, the more successful will be the PAL session in terms of being productive whilst achieving its intended participative nature.

Table 2: A hierarchy of PAL session interaction

PAL session type	Description	Chain of communication	PAL Leader attributes	S attribute	SL-S relationship	S-S relationship
1	Disengaged	One-dimensional (SL…S)	Unconnected	Uninvolved	Copes - is present	Spatial
2	Instructive	One-dimensional (SL-S)	Advising Telling	Passive recipient	Instructs - listens	Shared reception
3	Inquisitive	Two-dimensional (S-SL-S)	Responsive	Active questioning	Answers - questions	Shared responsibility
4	Reactive	Two-dimensional (SL-S-SL)	Encouraging Questioning	Responsive	Stimulates - reacts	Shared responsibility
5	Discursive	Three-dimensional (SL-S-S-SL)	Supportive Organising	Participant	Coordinates - participates	Interactive
6	Idealised	Three-dimensional (S-S-S[L]-S)	Participant	Participant	Equal	Collaborative Interdependent

Types of PAL sessions

1. Disengaged PAL sessions

PAL sessions of type (1) are unlikely to be successful. In type (1) sessions, there is neither much connection between PAL Leaders and students, nor between students. This would be a difficult and unrewarding session for the PAL Leader and unproductive for their students. Example quotes and remarks which illustrate this sort of session are:

> "You go in and say what do you want to do and they're always going to turn round and say 'oh, dunno, nothing" (PAL Leader comment)

> "There still seems to be a lot of schoolgirl/ schoolboy mentality like 'you're the teacher I'm not going to help you sort of thing and it really didn't help me to help them" (PAL Leader comment)

> "Sometimes you stand there and you try but it's just dire, no one says anything… not good" (PAL Leader comment)

> "Sometimes there are people that don't say anything or participate" (PAL Leader comment)

2. Instructive PAL sessions

PAL sessions of type (2) may potentially be of use to students and may sometimes be appropriate (e.g. when referring to PAL Leader's experiences) but may also be contrary to what PAL is intended to be (and risk the concomitant problems of unauthorised instruction by students). Either where appropriate to convey experience and opinions, or because of (perceived) pressure or expectations by their student group, or due to a perception that this approach represents some form of default, these sorts of sessions may occur:

> "PAL Leaders have told us exactly what we have needed to do and how we are to achieve it" (first year student comment)

> "The PAL Leader will go through examples step-by-step giving examples where appropriate" (first year student comment)

> "The PAL Leader went through what it needs to look like, showed us on the board, like you need to have this with this and then linked it to context diagrams… he clarified them" (first year student comment)

> "PAL Leader described own experiences and helped us to improve on his/her mistakes and use their experience" (first year student comment)

> "A number of students have had difficulties with programming and the PAL Leader has explained these further" (first year student comment)

> "I don't think we're ever been successful like that in having the opportunity to sit back and let them get on with it, I find it sometimes difficult not just to tell them the answer, I find it really difficult actually because sometimes they've just got no idea" (PAL Leader comment)

> "Sometimes I just find I have to tell them, I know it's no the point of it but otherwise…" (PAL Leader comment)

3. Inquisitive PAL sessions

In PAL sessions of type (3) students will focus on asking the PAL Leader about issues of concern or interest – these may relate to course subject matter, the demands of assessed work, 'survival skills' etc. The emphasis though is on a 'question and answer' type approach, which may at times be appropriate and of value but, it is also indicated, can stray too far towards portraying an 'expert' position:

> "Gives me the opportunity to ask specific questions on all subjects"

> "I found I can ask many questions and know how to deal with assignments"

> "I can ask questions to a person that has already been through the first year"

> "If we had any concerns about work the PAL Leader will go away and read up on it and then get back to us"

> "I think our year relied on PAL Leaders far too much – they're just there for support and not to answer all your questions"

> "… we could just talk to [PAL Leader] about our work… also asking her questions and she answers in a student perspective"

> "Knowledge from second years"

(All comments made by first year students)

4. Reactive PAL sessions

PAL sessions of type (4) reverse the character of type (3) sessions: instead of students asking the PAL Leader questions, the PAL Leader attempts to draw out knowledge and encourage the group to generate their own understanding and knowledge through effective questioning, redirection and prompting techniques. Except for the possibility of overuse as a technique, this will always be an appropriate method of learning in PAL: the PAL Leader here is now adopting a truly facilitative role and generating ideas from their students, rather than attempting, or being drawn into taking, an 'expert' stance:

> "The PAL Leader didn't do our assignment for us, he instead cultivated our answers" (first year student comment)

> "Our PAL Leader… did coax a lot of things out of us, he didn't give it to us, he'd ask what does that mean? In a way he'd play stupid to help us get the answers, because it's always more satisfying when you get the answers yourself" (first year student comment)

> "We say 'how much do you know?' and we write it all up, we don't input that much…" (PAL Leader comment)

> "Got a good response from the group with the questions I asked" (PAL Leader comment)

> "Managed to get responses from all around the group by asking if anyone knows the answer to other people's questions" (PAL Leader comment)

5. Discursive PAL sessions

In this type of PAL sessions, participation, cooperation and interaction between first year students are occurring. The PAL Leader takes the role of managing discussion or organising tasks.

> "The PAL person always gets us to join in and bond together"

> "We did interact as a group and [the PAL Leader] would sit there and supervise. I knew a lot about rich pictures and my friend didn't so I would explain to her and look at [the PAL Leader] and he'd say whether it's right. So he was always there checking we are telling each other the right thing. If there was something you didn't know he could jump in and say…"

> "They said the best thing is to maybe split yourself up into smaller groups and discuss one person thinks about one area and another person thinks about another area and then come all back together so yeah they helped us a great deal with working together"

> "They just helped us to discuss them as a group, they didn't really do anything, they didn't tell us the answers or anything they just got us to actually talk to each other about the problems we had as opposed to just sitting on our own and thinking about them which is definitely very useful"

> "They started off by saying 'well we thought this this and this, maybe it's not right but this is what we thought' and then other people contributed what they had and then the people that were more, say, business oriented or computing oriented, then brought in their point of view as well"

> "We were encouraged to explain concepts to fellow students"

(All comments made by first year students)

6. Idealised PAL sessions

In PAL sessions of type (6) the distinction between the PAL Leader and the student group is broken down. This is seen as the most appropriate form of PAL session and a constructive method of learning: students are taking responsibility for their own learning, sharing ideas and the PAL Leader is as much a part of discussion as they are controlling the session:

> "Good place to air problems so class can discuss as well as lecturer/ PAL Leader"

> "Clarified my understanding with other course-mates"

> "PAL has a laid-back, democratic atmosphere"

> "It helps to revise in a group in the PAL session because everyone can help each other"

> "It helps to be with members of the group that are having problems with work, when this explained, it can help you understand. Also you may be able to tell group members how to do things they are struggling with"

> "If someone in the group knows the answer they help other students"

"The important thing about PAL is that it gives the opportunity for students to talk to other students, personally that's the only way I learn is through talking to other people… in PAL you encourage people to have the confidence to speak, expressing your point of view on a subject and that might get the rest of the class thinking, or saying [what they believe]"

"Everybody chipped in with their ideas, some obviously as well had the wrong point but everybody… it was like a big forum for ideas"

"[In PAL] you can knock ideas around, you could have an amazing assignment [written] and you've got all the points in your head but then somebody just chirps in with one idea and you think 'that really makes sense' and it brings it all together kind of thing"

(All comments made by first year students)

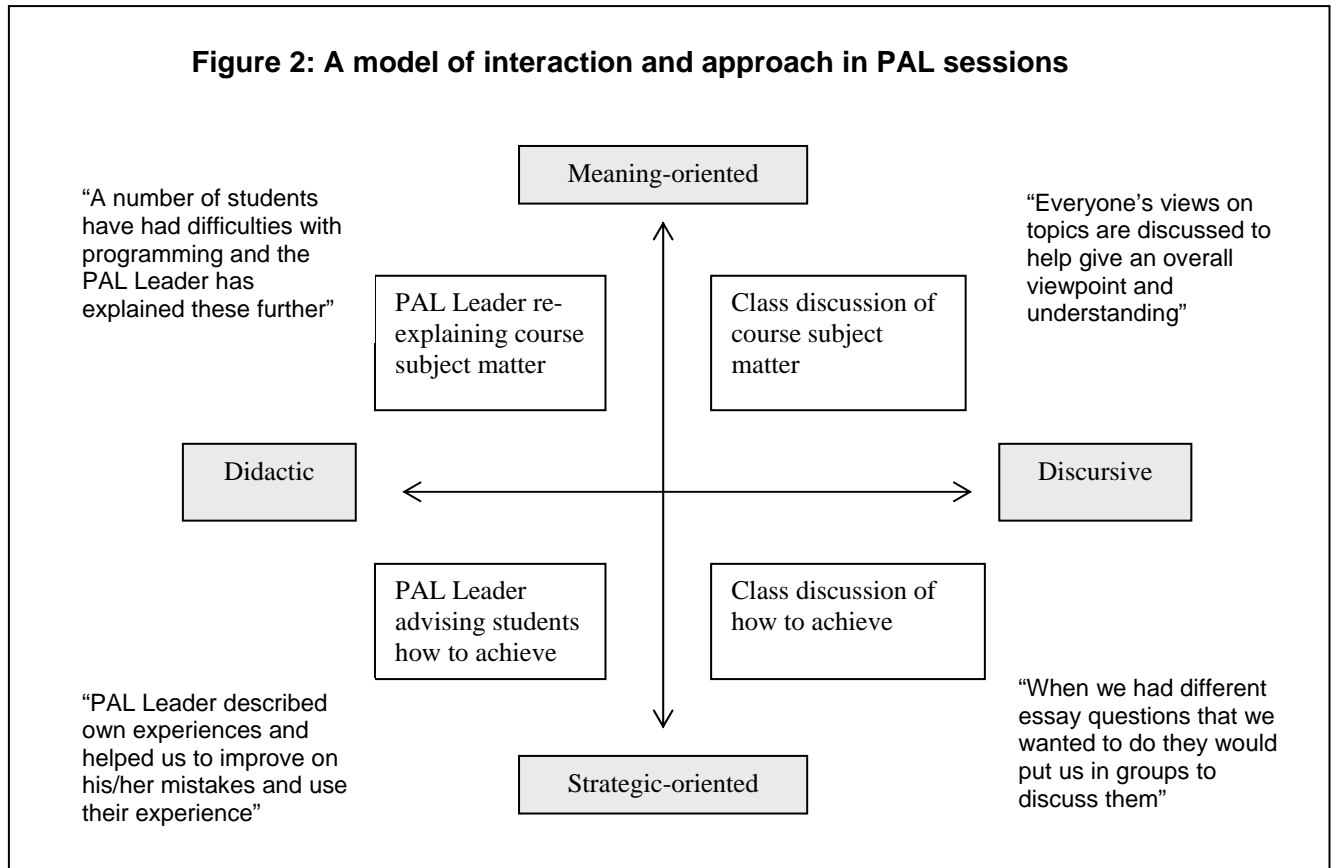*Approaches to learning and interaction in PAL sessions*

The results of this study suggest PAL may at times focus on strategic-oriented aspects of study – that is to say concerned with how to achieve, assessment criteria, how to write assignments etc. – and also at times focus on meaning-oriented aspects of study – that is to say concerned with understanding the subject matter of the course.
A range of strategic- and meaning-oriented approaches are described above, with both forming a focus in PAL at different times. When adopting a meaning-oriented approach, PAL may focus on basic, difficult or 'problem' aspects of the subject matter of a course, and consolidate, review, simplify and reinforce taught elements or subject matter students have not understood. When adopting a strategic-oriented approach, PAL may attend to generic, transferable issues such as how to structure or reference assessed work or managing time, or assessment criteria and course expectations. PAL sessions are also used for revision, by students to try and help improve marks and to be aware of future course directions.
PAL sessions may also overlap both approaches, where students use PAL to enhance understanding, but in specific reference to assessed work, for example in revision sessions.

A model is presented below, together with illustrative quotes, of how both strategic- and meaning-oriented approaches may manifest in PAL, in both a didactic and discursive fashion:

Figure 2: A model of interaction and approach in PAL sessions

Meaning-oriented

"A number of students have had difficulties with programming and the PAL Leader has explained these further"

"Everyone's views on topics are discussed to help give an overall viewpoint and understanding"

PAL Leader re-explaining course subject matter

Class discussion of course subject matter

Didactic

Discursive

PAL Leader advising students how to achieve

Class discussion of how to achieve

"PAL Leader described own experiences and helped us to improve on his/her mistakes and use their experience"

"When we had different essay questions that we wanted to do they would put us in groups to discuss them"

Strategic-oriented

Discussion and conclusions

Pervasiveness of different approaches and level of interaction

This study has not set out to categorically suggest what proportion of PAL may be taken up with strategic versus meaning-oriented approaches, or with varying degrees or types of participation. Rather, the intention has been to point out the types of approach and interaction that have been seen to emerge in a particular PAL programme, so as to suggest the different manners in which PAL may come to operate. Where there are indications of a bias, as in figure 1, it appears that PAL is more focussed on a meaning rather than a strategic approach to study, at least in terms of its outcomes. This may be a feature of how issues are discussed: where students are focussed on meaning and understanding, then discussion will centre around course topics; where students are focussed on a particular piece of assessed work, discussion may centre around particular aspects peculiar to assessed work (for example structuring work and assessment requirements) but understanding of course subject matter may also still be relevant. This may be why PAL appears to tend towards a meaning-oriented approach. Demands upon students at a particular time of year will also influence this: where many assignments are due, PAL will perhaps inevitably focus on these; where much difficult or new topics are being conveyed to students, this may be the focus of PAL. Above all, student demands are likely to dictate what will be covered in PAL sessions.

There are clearly different modes of operation of PAL in terms of how participative sessions may be, and this may depend very much upon the student group and/or PAL Leader. There does appear to be an indication that PAL sessions become more participative as the year progresses. This is likely due to PAL Leaders' increasing skill and confidence, students' acceptance and appreciation of cooperative learning and ability to become involved in discussion, through their own increased confidence and growing knowledge of the subject. It is suggested then that there is a general trend through the academic year to move from a didactic to a discursive form of PAL, with the focus of sessions changing focus between meaning and strategic orientation depending on students' needs.

Implications for understanding Peer Assisted Learning - meaning and strategic approaches

Ashwin (2003a) suggests that PAL programmes may come to focus (too) heavily on strategic aspects of learning, even to the extent that whilst this may cause heightened performance it will be at the expense of quality of learning. Other researchers have also expressed the concern or made the observation that PAL can be very strategically-focussed (Gibbon & Saunders, 1998; Miller & Packham, 1999). This study does find that PAL sessions have strategic intention and outcomes, but it does appear that meaning-oriented approaches also play an important part in PAL. Students speak often about PAL often in terms of enabling understanding and many observed sessions attend to course subject matter in isolation from assessment.

The issue here is likely to be one of balance. It will be appropriate for PAL to focus on assessed work to a degree but also to ensure that this does not overwhelm the content of PAL sessions. One way this has been attempted is to try to stipulate that part of each PAL session focuses on understanding or to design activities in accordance with this intention (Draper, 2003). The PAL scheme at Bournemouth also offers 'stock' activities in its training manual for PAL Leaders to encourage this type of approach. Observations 2,3 and 4 above are of sessions using just these materials. Where PAL is attending to assessed work, pre-designed activities can be used, as in observation 1, where the class took time to discuss the relative merits of two sample essays. It is also the experience of these authors that PAL sessions often

focus upon assignment demands in a meaning-oriented way, through attempting to understand the subject matter of the course relevant to a particular piece of work, as in observation 6.

Implications for understanding Peer Assisted Learning - cooperation and interactivity

This study has explicitly set out to investigate and describe Peer Assisted Learning *as it operates* to produce models of learning that operate in PAL. Certain types of interaction and learning in PAL are in accordance with how implementers have previously assumed or portrayed PAL operates. Certainly Reactive, Discursive and Idealised PAL sessions as described above fit with descriptions of PAL as a cooperative and reciprocal form of learning (Donelan & Wallace, 1998; Donelan, 1999; Congos & Schoeps, 1998). There are a range of learning behaviours as described in this study that match the notion of students developing skills, knowledge and understanding through cooperation (Capstick & Fleming, 2001) and allude to the beneficial aspects of cooperative learning as a general theory. Johnson & Johnson's (1989) notion of 'promotive interaction', where individuals encourage and enable one another's achievement and understanding is evident here, and as such PAL may at times indeed be called a 'truly cooperative initiative' (Donelan & Wallace, 1998). Features of the cooperative approach as suggested by the operation of PAL here include a focus on a 'constructivist' approach (that is to say individuals collaborating to construct understanding) (Roschelle, 1992) and there is evidence of reciprocity where students are focussed upon helping one another to achieve understanding or solve problems.

PAL does not however always operate as intended, as is sometimes the assumption of implementers (Ashwin, 2003a). Whilst PAL has the capacity to operate as a fully participative, cooperative, interactive scheme, there should be a concern that it cannot be always be said to do so. The implications for implementers should be to recognise that PAL has the potential to run as intended, but that it will likely not always do so. Sometimes it will be appropriate for PAL Leaders to offer advice or perspective, but it is unlikely to be desirable for PAL Leader to engage in *ad hoc* pseudo-teaching.

A lack of cooperation in PAL may occur through inappropriate expectations of or resistance by first year students, difficulties on the part of PAL Leaders in engendering a cooperative environment (and as such falling back on instruction), or due to insufficient assistance and guidance given from staff that would enable a cooperative environment (such as provision of groupwork activities that may be attended to in PAL). As such, it will be important for those involved with PAL programmes to attend effectively to setting appropriate expectations of first year students and PAL Leaders, and to correctly train and support PAL Leaders. It is not enough to assume that because PAL is supposed to be cooperative, that in reality it will always operate in this way.

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