

SERVICE LEARNING IN A PROBLEM BASED INSTITUTION: POSSIBILITIES AND THE WAY FORWARD

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The introduction of learning through community engagement both locally and overseas is a way of re-contextualising learning that happens during the normal curriculum (Eyler and Giles, 1999). This is especially so in an institution that makes use of a Problem-based pedagogy. Problem-based learning (PBL) uses problems as the starting point for students to acquire knowledge. The focus in such a system is through the constructing of knowledge through participating in the problem solving process (Barrows, 1996). Service learning projects allow students to move away from the classroom to put the PBL to the test in real life situations and this application of PBL outside the school gives rise to interesting possibilities in examining the outcomes of PBL in an out-of-class environment.

Service Learning offers a number of parallels to PBL in the way students engage with knowledge and each other. Students who go through service learning programmes are more likely to make use of experience to learn (Giles and Eyler, 1994) and would also be more willing to make use of what they have learnt previously in the new contexts as the learning is decontextualised out of the classroom (Bransford and Vye, 1989). The use of problems to drive learning in PBL mirrors the student's engagement with real-life issues when on service learning programmes as they are required to construct their own responses to the problems based on what their prior knowledge just as someone would in the field. It is this apparent link that drives the conceptual framework that is detailed in this paper.

By bringing the examination of the efficacy of certain student outcomes of PBL out to service learning programmes, a different perspective and level of analysis can be gained in the process. The PBL curriculum would engender certain traits in individuals who learn effectively in those situations – and it is sometimes difficult to pin these traits down in class as intrinsically driven or merely habitual or procedural when observed in their day-to-day engagement with problems. If students exhibit certain traits associated with effective PBL learners while on a service learning project, then one would be able to suppose that those students have applied principles of learning in PBL effectively. The link back to efficacy of PBL in engendering such behaviours and practices would also be made clearer.

Research Question and description of outcomes

The link between PBL and service learning will be examined in the light of three major student outcomes: transferability of learning, agency and responsibility. Students in a PBL environment through their engagement with problems and working in teams should exhibit certain traits that would enable them to thrive in such a learning environment. One of the aims of PBL institutions like RP is to engender self directed learners who are proficient in dealing with a myriad of problems when faced with them. Through the engagement with real world problems, students would be forced to take on roles to teach each other, make decisions and

set goals for their learning (Alwis and O'Grady, 2002) – actions that would require students to demonstrate their transfer of knowledge, agency and responsibility.

Transferability refers to the ability of students to apply what was learnt in the classroom to situations outside it: we see service learning as one manifestation of the transferability of learning that takes place in PBL. Service learning has been observed to effect an increase in the participants' ability to think critically as well as enhance their ability to draw links between what was learnt previously to situations faced during service (Eyler and Giles, 1999). Students who exhibit such a trait would recognise chances to apply what was learnt previously and constantly seek opportunities to make use of the knowledge and skills in new contexts.

Agency and responsibility for learning are traits that should arise from a learner's engagement in the PBL process. Students have to be self-directed and fully engaged in the process of solving the problem for them to learn well in such a system and one can thus infer that the most effective learners would feel personally responsible for how they learn. Agency is seen more as an instrumental trait where agentic individuals are more likely to take action or perform tasks that would otherwise not be done by others. It is thought that participants in service learning projects would exhibit a higher level of agency and would act with greater initiative as they are taken out of their usual learning environments and faced with new and unfamiliar environments (Barber and Battistoni, 1993; Yates and Youniss, 1996). This would serve as a valuable feedback mechanism to track the possible improvements (or otherwise) of the students from a PBL environment and how they behave when in a service based environment.

Responsibility differs from agency in that it presents a more teleological approach to the student's engagement both in class and during the service learning project. A responsible learner would do all that is in his or her power to achieve what is perceived to be their knowledge ends (Code, 1983). This conception of epistemic responsibility would impact on a student's motivation to work on a problem and it is thought that one who is responsible for learning would tend to be clearer about what is to be learnt and the way that learning is to be achieved. Translated into a service learning context, participants who set clear objectives and are able to show how actions can be linked to their effects would demonstrate a similar responsibility for their project. The examination of these would enable one to give feedback to how well PBL is in engendering such traits.

Possibilities – Student Outcomes

The three outcomes (Agency, Responsibility and Transferability) were identified as possible means of analysis following a pre-trip survey conducted on students prior to a series of service learning projects in December 2005. The survey was aimed at measuring the students' attitudes towards coming for class, the PBL system and how they like to learn (survey and brief results attached at Annex A). This was administered online to a sample size of 80 participants who were going for the service learning projects. The questions were based on a four-point Likert scale that went from Strongly Disagree to Strongly Agree.

Six different aspects of learning in a PBL institution were examined through this survey which included teamwork, personal motivation, how respondents see learning issues, the relationship between school and real life as well as attitudes towards coming to school and

PBL in general. The results of this survey did not prove to be very conclusive as the respondents seemed to give the most 'politic' responses to the question. For the most part, the responses showed that students were happy working in teams and had a better than average preference for PBL as a learning system.

The main point of interest in this survey however were the responses that showed a very high preference for that particular trait or aspect. In particular, four questions returned responses that were almost completely in the 'Agree' and 'Strongly Agree' range and it is from these strong preferences that the three outcomes of agency, responsibility and transferability were inferred. Responses to questions 'I want to contribute to the success of my team in class' and 'I can make a difference in the learning of others' that pointed towards the respondent's preference for agentic behaviour. The fact that the respondents felt that success and the learning of others were dependent on them meant that they felt that they were instrumental in the work of a team in the PBL process. In the same way, responses to 'Learning is a shared responsibility' and 'My classes in RP make me think about real-life in new ways' showed strong recognition for the importance of epistemic responsibility and how the learning in PBL can be transferred to other situations.

The lack of a non-service learning control group to compare this data against prevents the use of this for further study but it does serve a purpose as a grounds for further investigation into the areas that showed marked preference for particular behaviours or inclinations. Although the survey also does not fully demonstrate the preferences of the service learning participants, it can serve to inform further studies into the three outcomes of agency, responsibility and transferability.

Methodology

Rather than have the students and participants of the service learning projects fill in individual surveys, a different approach to data collection will be taken. It was found that students tend to try to conform to general perceptions of how PBL should be conducted and how it should help them instead of giving a more personal view of the role of PBL in their learning. To get around this problem, participants would not be made to assess their own responses to the service learning projects or to talk about their own behaviour; instead, the staff leaders and facilitators of the project would be given a set of observational checklists to chart the behaviours and attitudes of the participants in a service learning setting.

The instrument for data collection comes in the form of an observation sheet that has three questions on each of the student outcomes that are to be measured. (Observation form attached at Annex B) A four point likert scale will be used. In addition to this a short free-response description of the activity or incident that precipitated the observation is included both for triangulation of the survey data and also to provide an additional layer of ethnographic evidence to support the sometimes more arbitrary decisions made in the filling up of the observation sheet.

A number of participants from a number of service learning programmes that range from 2-week long overseas-residential projects to one day locally run ones would be randomly selected for this study. The random selection of participants is important to reduce the potential predisposition of the observers to pick participants who have a stronger tendency to

behave with particular traits. Additionally, the longer overseas projects would involve pairs of staff acting as leaders and facilitators of the student teams. Both staff would be given observation sheets and will observe the same randomly selected participants – adding the potential for an additional layer of triangulation for the observation and field descriptions.

The questions that make up the three sections of the observation sheet are informed both by the previous survey administered in 2005 as well as generalised ideas about how the student outcomes would manifest during the participant's engagement in a community based setting. Section I of the observation sheet is centred on the instrumental tasks and behavioural aspects that students would generally exhibit and is focused on examining how the student would act in particular situations. This should be distinguished from the questions in Section II that are aimed at examining the links the student can make between his or her actions and the desired results. The questions are couched in terms of what can be observed when working in teams in an out-of-classroom setting.

The behaviours listed in the observation sheet mirror the intended outcomes of an effective learner in the PBL setting (Engel, 1991), grounding the link between the service learning projects and the PBL environment. The intentional emphasis on how students are seen to work in teams and how they make use of their prior knowledge and other PBL processes in the external environment would allow the observation sheet to provide a feedback on the efficacy of PBL processes in engendering the identified outcomes.

The way forward

The shared pedagogical foundations of PBL and service learning in constructivism and their ability to engender deep learning allows us to make use of the latter to test the efficacy of the former. Further developments to the observation sheet would also allow for further additions to the list of student outcomes that can hone its effectiveness as a feedback mechanism for the practice of PBL.

Full results of the study have not been collected as a major data collection effort would occur in December 2006 during a number of overseas service learning projects and some related local projects. These results would be discussed when the data has been collected and analysed.

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Questions and summarised data from Survey conducted in November 2005

| | Percentage | | | | Average score |
|--|------------|----------|----------|-----------|---------------|
| | SD (1) | D (2) | A (3) | SA (4) | |
| Teamwork | | | | | |
| I don't like working in teams in class. | 47 | 37 | 16 | 0 | 1.69 |
| Working in teams is effective. | 5 | 5 | 53 | 37 | 3.22 |
| Working alone is effective. | 16 | 47 | 37 | 0 | 2.21 |
| I work well with my team-mates in class. | 0 | 11 | 53 | 37 | 3.29 |
| School and its relationship with life outside school | | | | | |
| RP classes are irrelevant to my life outside school. | 37 | 42 | 16 | 5 | 1.89 |
| I'm unsure about what skills are necessary about the future. | 37 | 32 | 32 | 0 | 1.97 |
| My classes in RP make me think about real-life in new ways. | 0 | 5 | 58 | 37 | 3.32 |
| Learning in RP prepares me for the future. | 5 | 16 | 47 | 32 | 3.06 |
| Personal motivation | | | | | |
| I want to contribute to the success of my team in class. | 0 | 0 | 53 | 47 | 3.47 |
| I enjoy allowing others to take the lead in class. | 5 | 26 | 42 | 26 | 2.87 |
| I like playing the role of a leader in a team. | 5 | 21 | 58 | 16 | 2.85 |
| Learning | | | | | |
| Independence is an important part of learning in RP. | 5 | 0 | 58 | 37 | 3.27 |
| It's hard for me to see the learning issues of the day. | 26 | 42 | 26 | 5 | 2.08 |
| General attitudes to school | | | | | |
| I don't find the classes exciting enough | 16 | 58 | 16 | 11 | 2.24 |
| I look forward to coming to RP. | 11 | 26 | 37 | 26 | 2.78 |
| General attitudes to PBL | | | | | |
| I like the RP-PBL process. | 0 | 32 | 42 | 26 | 2.94 |
| Learning is a shared responsibility. | 0 | 5 | 53 | 42 | 3.37 |
| Learning in RP is comfortable. | 11 | 16 | 53 | 21 | 2.86 |
| I can make a difference in the learning of others. | 0 | 0 | 58 | 42 | 3.42 |
| PBL helps me learn. | 0 | 11 | 63 | 26 | 3.15 |

Note on the survey

The survey was conducted online over 2 weeks in November 2005 prior to several overseas service learning programmes. 80 student participants of the service learning programmes were asked to do the survey that returned a 60% response rate.

The highest mean scores were highlighted and it was found that the traits represented by the questions coincided with the student outcomes of agency, responsibility and transferability, hence the further study of these through the observation sheet this year.

Service Learning Observation Sheet (individual)

Student _____ on Date _____

Section I

| | | | | |
|---|----|---|---|----|
| Student takes initiative on tasks. | SD | D | A | SA |
| Student suggests strategies/solutions to problems. | SD | D | A | SA |
| Student takes on a leading role when necessary or when offered. | SD | D | A | SA |

Section II

| | | | | |
|--|----|---|---|----|
| Student is able to see and verbalise his/her role in the project/task clearly. | SD | D | A | SA |
| Student exhibits causal thinking (shows evidence of being able to link causes with their potential effects). | SD | D | A | SA |
| Student shows an interest in team decision making processes. | SD | D | A | SA |

Section III

| | | | | |
|---|----|---|---|----|
| Student recognises appropriate areas where prior knowledge is applicable. | SD | D | A | SA |
| Student is able to identify potential issues that require further team consideration/ resolution. | SD | D | A | SA |
| Student is able to give an overview of the processes used to get to the solution. | SD | D | A | SA |

Description of situation and other comments

| |
|--|
| |
|--|

Recorded by: _____ Date: _____