

# The Ideology of Problem Based Learning

## Part 2 Problem Based Learning in Practice: A Case Study

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### **Abstract**

The first part of this paper examined the changing roles of students and teachers in Problem Based Learning (PBL) programs and discussed the underlying theories that inform PBL programs while analysing the needs and demands of them (Walmsley 2007). In this paper, I give an account of the inaugural PBL program in English Literature at a leading Tokyo Medical University to show how certain problems unaccounted for, or unseen in theory, emerged and were solved in practice.

**Keywords:** Education. Problem Based Learning. Ideology. English Literature.

### **PBL in English Literature: A Case Study**

#### **AIMS**

- To introduce students to reading for a purpose in English
- To provide students with basic literary critical skills
- To show how literature impacts upon our daily and professional lives by providing a space for ethical/moral discussion
- To enable students to become more proactive and critical in their learning by developing independent learning, personnel and time-management skills.

#### **TEXTS**

Dr Jeekyll & Mr Hyde – R. L. Stevenson

Frankenstein – Mary Shelley

The Invisible Man – H. G. Wells

## ASSESSMENT

Each group was given two research tasks to complete and one presentation/performance task. Students were also required to write a short essay 500–1000 word discussing the course, their responses to it, and reflecting upon what they had learned.

## ORGANISATION

Students were randomly divided into three groups – **Monsters**, **Mad Scientists** and **Invisibles**. Each group's presentation/performance task was based around the following texts:

**Monsters** – Frankenstein

**Mad Scientists** – Dr Jekyll & Mr Hyde

**Invisibles** – The Invisible Man

After being randomly assigned groups, students were given a brief introductory lecture describing the course. A merit system was introduced, and students were informed that they would be competing with each other. The group accruing the most points at the end of Day 3 would be declared the winner.

The first session began by asking students to examine their own ethics. The following hypothetical situation was given to them to see how easy or difficult it would be for them to cross the line that divides their stated intentions and their subsequent actions:

*You have discovered a drug that will cure cancer. All of your savings, house etc. have gone into the research and development of this drug. If it fails you will lose everything.*

*You have two choices*

*Do your drug testing by the book. Take no shortcuts and have your drug on the market in 12 years.*

*Fast track the test. Take shortcuts and hope everything works out okay.*

Without much discussion, the Monsters chose to fast-track their drug. In response to this decision, the Mad Scientists & Invisibles were given an opportunity of falsifying their tests to beat them. Though discussions were animated and lively, a consensus was forced through both groups that they would behave ethically and hope the Monsters would not have their

drug approved. When it was announced that the Monsters drug was approved there was considerable dismay among the other two groups and some recriminations. Having eliminated the competition, the Monsters were provided with an extra scenario, which involved greater falsification of results to cover up potentially lethal side-effects of their drug. The group became immediately divided between those who wanted to “tough it out” and those who wanted to do the honourable thing. The impasse was only broken when one member tried to calm the others down by pointing out that it was “only make-believe”.

For the next task, each group was given 90 minutes to research and prepare a class presentation. The Monsters were assigned the topic of resurrectionists Burke and Hare, the Mad Scientists were told to investigate the drug Thalidomide and the Invisibles had to discuss Watson and Crick. No further information was given to the groups.

Problems, both academic and disciplinary, manifested themselves immediately. The Monster group was seriously under-manned because three of their five members absented themselves from the afternoon’s session. The remaining two members had amassed a considerable amount of data, but struggled to offer a coherent presentation and were unable to answer any of the follow-on questions about Burke & Hare and the role of the resurrectionists in Victorian medical research. The Invisibles had a different problem. They had narrowed their search to primary sources but, unsurprisingly, they had considerable difficulty understanding Watson & Crick’s letter to *Nature* and the other highly specialised articles discussing the discovery of DNA. After a series of negotiations, the Invisibles were given access to three articles I had brought with me and allowed an extra 10 minutes to prepare their presentation. The Mad Scientists, on the other hand, had availed themselves of a voluntary lunch-time tutorial on research methods and produced a strong presentation on the drug Thalidomide. In the post-presentation discussions students evaluated their own, and the other groups, performances. The following conclusions were reached:

- The reason the Mad Scientists group was more successful was that they spent some of their time planning, identifying their needs and delegating tasks. Both the Monsters and Invisibles regretted not availing themselves of the tutorial time.
- Successful research is not decided by the quantity of information amassed, or even the quality of information, but rather the way that information is processed and used.
- Some form of hierarchical structure and a clear agenda was essential to success.

Given the problems the groups encountered, the original schedule was reshuffled and the second research task was assigned to Day 2. A seminar on study skills and resource management was added. The first day ended with a reading with a purpose workshop. Students were given the following list of questions and then informed that all of the answers could be found in *Frankenstein* p. 4–21. The exercise was timed (30 mins) and students were advised to skim read looking only for keywords that would allow them to identify the necessary passages.

- 1– In which town was Victor Frankenstein born?
- 2– What was the name of Victor's school friend?
- 3– What was 150 metres high
- 4– What colour were the creature's eyes?
- 5– How did the Creature kill William?
- 6– Who told Victor he could be a very good scientist?
- 7– What did the police find that made them think Justine was the killer?
- 8– What evidence on the body **should** have proved Justine **was not** the killer?

All of the students performed well and, of the students present, 90% correctly answered seven out of the eight questions. The remaining students answered six of the eight correctly. The only question unanswered was question 8. I guided the students through the relevant passages and, after much discussion, three students answered correctly. During this session the absentee Monsters arrived back in the classroom. The two who had been present all day had, however, disappeared. After being assured that they had understood the rules of attendance they were informed that they had failed the course. When they asked for a second chance they were told that they had to come up with a convincing argument why they should be allowed to continue by 9.30 am of the following day. Failure to present a reasonable and coherent case would result in failure.

The second day started with the Monster group completely self-destructing. The original three absentees once again had failed to attend. The groups were reshuffled with a member of the Mad Scientists and a member of the Invisibles being reluctantly drafted onto the Monsters team. Despite the earlier warnings, and the expulsion of three team members, a fourth member of the Monsters failed to return from the morning break. All four appeared

halfway through the afternoon session and were informed that, because they had failed to adhere to the rules of the course and had failed to avail themselves of the opportunity to make up for their absence by providing a case for their absenteeism, their presence was no longer required. The remaining students were shocked by the dismissal of their peers and this presented an opportunity for discussing the ethics of personal responsibility using *Dr Jeckyll & Mr Hyde* as an example. Many students began to see parallels with Jeckyll's persistent use of the drug and the Monsters perverse absenteeism. A lecture was then given which introduced the idea of the ethics of experimentation using examples of body snatching, Thalidomide and Genetically Modified Foods. Students were given the following discussion topics:

- Did the body snatchers help advance medical science?
- Should GMF food be banned until their long-term health and ecological effects are understood?
- Knowing about the damage caused by thalidomide in the past could you, as a doctor, prescribe this drug in good faith?

The student discussions were lively and no consensus was reached. The Mad Scientists proved to be the more adventurous group, arguing that neither bureaucracy nor a bad history should interfere with scientific progress. It was interesting and intriguing to see how each group had started to take on the characteristics suggested by their names: the Invisibles rarely volunteered for anything, the Monsters had wreaked destruction on themselves, and the Mad Scientists were taking an increasingly risky position with regard to ethical decisions.

This session ended with a discussion about the relationship between the three texts and science. Both the Invisibles and the reconstructed Monsters believed that all three texts offered wise and powerful warnings about the need for greater control over scientific experiments. Unsurprisingly, the position of the Mad Scientists was these warnings were damaging and ill informed. The three groups were assigned their second research tasks. The Mad Scientists were told to investigate the Hippocratic Oath and give examples of how it had changed over time. They also had to discover and analyse one example of a doctor who had broken the Oath. Leading on from this discussion, the Monsters were simply given the name Harold Shipman and were told to present a useful introduction to him. The Invisibles would round off the discussions by preparing the case for, and against, euthanasia.

All three groups produced well researched and effective presentations. During the feedback session the following information emerged:

- All groups had specifically allocated tasks, which fell into three broad areas: information gathering, writing and structuring the presentation and giving the presentation.
- Group members were in constant contact and dialogue. This allowed requests for more information, or more accessible information to be made quickly.
- By discussing and evaluating the research findings in detail, students found themselves better equipped to understand their subject.
- The risk of failing to deliver had been enhanced by the disappearance of the four failed students.
- The desire for their team to win the research fund was also becoming a dominant factor.
- Increasing competitiveness was creating strong bonds within the groups, which undermined earlier alliances.

After a review of the work completed so far, a writing and structure workshop was held. Students were encouraged to create thesis statements and outlines about their chosen texts.

The third day began with a review of the course so far. Students were then given time to prepare their performance tasks. Each group had to dramatise a scene or scenes from their group text. Performances had to be a minimum of 10 minutes in length. At this point it was possible for all of the groups to emerge as overall winners.

All three groups engaged actively in the task and performed well. The Invisibles, who offered a straightforward adaptation of the first two chapters, started strongly. Their scenes were well blocked and they were enthusiastic in their performances, but their overall plan was too ambitious. Two thirds of the way through, they began to lose momentum and appeared confused and uncoordinated by the end. The Mad Scientists offered a condensed adaptation of *Jeekyll and Hyde*, relying heavily on comic effect. Like the Invisibles, they over-extended themselves which resulted in a mix-up over who was playing *Jeekyll* and who was playing *Hyde*. The overall winners, surprisingly, were the reconstructed Monsters, who offered a revisionist account of the Creature's encounter with the blind man and his family. Departing

significantly from the text, the Monsters used the character of the blind man to express their reading of the Creature and the text.

The final session involved a close reading workshop. All three groups were given sections of *Dr Jeckyll & Mr Hyde* to read and were required to make judgements about the characters and the language. By this time the students were actively engaging with the material and interrogating the rival groups when they disagreed with them.

The sessions on the fourth day were for consultation only, to ensure that the students were given ample time to reflect upon, and write about, their experiences and responses to the texts. One student wrote at length about how much irrelevant information there was on the Internet, and the difficulties involved in amassing reliable data. Another commented on how reading *Frankenstein* had made her aware of how quickly she judges people by their appearance. Probably one of the most telling comments was this sentiment, "I learn that there are many things which I think I know about but I do not. And we discussed those things. Discussion brings me stimulation. We can exchange frank opinions. I do not have such a chance often. I hope we have more chances."

## CONCLUSION

Over the four-day period, students successfully performed a series of tasks and readings. They learned how to manage themselves, their resources and their time. When difficulties occurred, and they came across a seemingly insoluble problem, they began to negotiate for help, a time-extension or a different task. In short, after a faltering start, the students adapted well to a radically different learning environment and responded positively. Indeed, by the end of the course, they began to jealously guard their newly discovered autonomy. Indeed, on several occasions, they insisted on the freedom to prepare their work unsupervised. Their growing confidence and willingness to challenge not only the teacher, but also each other, suggests that the flexibility offered by the PBL environment was beneficial. On this occasion, therefore one can conclude that the PBL programme was successful. There are, however, several things that need to be taken into consideration for future courses:

- Because the course was scheduled for four days and was interrupted by a National Holi-

days and the weekend, a high degree of momentum was lost. Having a five-day course in a week without a National Holiday would be extremely beneficial and allow for follow-on activities.

- A greater emphasis should be placed on student preparation. Significantly, on the first day none of the students had read, or even purchased, the primary texts.
- Because of the time constraints and progressive nature of accelerated learning, attendance is vital, and students should be made aware that absenteeism or excessive tardiness **will** result in failure. Furthermore, because of its reliance on group-work it should be made clear to prospective students that make up work will not be given.
- It is essential, when devising a PBL course that the material is flexible enough to accommodate any problems that emerge during the sessions. Many students commented on the changes between the actual course and the planned overview they were given at the beginning and expressed a sense of gratitude that the course was accommodating to their needs and interests. A more rigid programme would have probably failed to address the needs and the problems of this student group.

Although the course was modified in subsequent years, the basic pedagogical strategy and content remained consistent. The course received a high approval rate amongst the students, and those students who attended the course seemed to fare better, both academically and motivationally, in the next semester. Thus, though a more prolonged study may be required, there is some evidence to suggest that the shy, socially reserved student who is lacking in both critical thinking skills and self-confidence would benefit enormously from a PBL Intensive course.