This article aims to describe a preliminary study on how to increase student engagement and motivation in a Biological Psychology module. Preliminary findings from the study suggest that the strategies adopted have helped to motivate students to continue learning more about the brain and that the absence of grading for the project allows them to focus on exploring their interest in the subject.

**Background Information**

The brain is an amazing organ, which does all these processing that makes a human, a human, and it has so many potentials for discovery!

Whenever I make this proclamation at the beginning of a module on the brain (PL3232 “Biological Psychology”), it may seem like the message falls on deaf ears. Semester after semester, students would stare blankly back at me, with some chuckling and giggling to even the remotest possibility that this “brain” module might be slightly interesting.

PL3232 is a core module that all students majoring in Psychology are required to take. The only prerequisite for this module is that they have to complete PL1101E “Introductory Psychology”. When it came to knowledge and awareness of biological psychology/neuroscience, the student demographics for this module was varied, with some in the cohort possessing various degrees of previous knowledge of the topics. A total of 157 students enrolled in PL3232 in Semester 2 of AY2012/2013, of which 40% were first-year students from the Faculty of Arts and Social Sciences (FASS), 44% were second-year students, 9% were from the third year, and the remaining were students from other faculties, mainly third-year students from the Faculty of Science (FOS). However, from the show of hands during the first lecture (Week 1), the majority of students did not have any prior exposure to biological psychology or basic neuroscience. Therefore, it could be assumed that most students taking PL3232 in this particular target semester were beginners in the field of biological psychology.
Survey Statements

1. Biological psychology is difficult, dry and boring
2. I am not sure what benefits I can get from this module other than fulfilling my core module requirement.
3. Taking the biological psychology module is important in order to get to know more about the brain and what it does in my daily life
4. I would like to keep an open mind and see what I can learn about the brain in this module.
5. I am genuinely interested in discovering about the brain and its functions.

Needs Assessment

Survey findings and issues observed

An anonymous and optional survey was conducted in Week 2 of the semester to find out students’ initial perception of the brain and of biological psychology. 121 students (out of a total enrolment of 157) completed the survey, which asked them to indicate their responses to a list of survey statements, based on a 5-point Likert scale on a continuum from “Strongly Agree” to “Strongly Disagree” (Table 1).

According to the survey findings, 32.2% of the respondents agreed that biological psychology is difficult, dry, and boring (Statement 1). The survey also revealed that 21.4% of the respondents were not sure what benefit they could get from reading this module, other than to fulfil the core module requirement (Statement 2). The survey findings, coupled with the fact that PL3232 is a required module and most of the students taking this module were beginners, pointed to two potential issues. First, there would be varying degrees of motivation and interest on the students’ part towards learning more about the brain (i.e., the focus of PL3232) and some of these students may just be there to “get the grades and get out”. Second, some of them may have developed some apprehension and anxiety about the module. This could be due to their beginners’ level understanding of biological psychology, a possible lack of genuine interest, and the fact that PL3232 is a required module.

Helping students build an intrinsic motivation for learning

The two issues, if left unchecked, may potentially hinder the establishing of a conducive environment for learning; that is, learning that not only enables students to get good marks and maintain a good cumulative average point (CAP), but also learning as a process of building up their knowledge base and be able to pursue possible interests within the field for further intellectual development. Ultimately, when it comes to achieving effective learning outcomes for a module, the long-term goal is to build in students an intrinsic motivation for learning. Intrinsic motivation, as defined by Ryan and Deci (2000), refers to the learner possessing an inherent tendency for development and learning. Several possible ways to develop intrinsic motivation have been suggested, such as choice and opportunity for self-direction (Ryan & Deci, 2000). Brozo (2005) also proposed that by helping students discover and develop an interest in a subject matter, it can enhance student engagement and their learning.

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Therefore, based on the needs assessment carried out, I hope to address the following question through my teaching practicum project, a preliminary study conducted in Semester 2 of AY2012/2013:

How do we make PL3232 more relevant and engaging for these students, and hopefully, help them to start developing some intrinsic motivation to learn more about the brain?

Strategies Adopted to Increase Student Engagement and Motivation in PL3232

Phase 1: Participating in the tutorial group project “The Interesting Facts of the Brain”

The practicum was carried out over four weeks, spanning from Week 8 until Week 11 of the semester. The practicum was called the “Interesting Facts of the Brain” project. Students in PL3232 were divided into 8 tutorial groups, and each group had between 19 to 20 students. Each week, I assigned a broad topic to two different tutorial groups. All the topics assigned were not covered in the formal PL3232 curriculum for the semester. This was planned in order to extend the students’ exposure to studies and research done on the brain beyond what had been covered in the textbook and/or lectures. The topics assigned across the four weeks were: “Brain and Eating/Drinking”, “Brain and Sexual Behaviours”, “Brain and Pain”, and “Brain and Smell”. Each student had to search for an article from a peer-reviewed journal that was not older than 10 years old, and the article selected had to be related to the topic that they were assigned. I purposefully did not set too many limitations on the article they could use; this would hopefully give students a free rein in finding something that actually piqued their interest. I stressed the importance of finding an article that actually made them go, “Huh?! Really?? I didn’t know the brain does that! Cool!!”

After the students had selected an article they found interesting, they had to post a summary of it on the discussion forum of the IVLE. The summary also had to include their own thoughts on why they found the particular article interesting.

Phase 2: Participating in the individual survey “The Most Interesting Fact of the Brain According to Me”

After all the tutorial groups had posted the brain facts they had collected through reviewing the journal articles, the next phase of the practicum was to have them participate in the survey posted on IVLE called “The Most Interesting Fact of the Brain According to Me.” The students were asked to read through the various facts of the brain that had been posted by their classmates in the IVLE discussion forum. They could choose to read on just one topic or more. Then, they had to state in the survey the one fact about the brain that they found to be the most interesting. However, they could not choose from their own submission; this was to encourage them to read up on the facts their classmates had submitted and in doing so, expand their current knowledge about the brain. I then picked the one fact that garnered the highest number of “Most Interesting” votes, and announced it on the IVLE’s Announcement platform along with the reference to the winning article.

Finally, to relieve anxieties related to how this assignment will be assessed, students who completed both the tutorial group project and the survey were automatically awarded the full marks allocated for the assignment, which made up 5% of their final grade. For this particular semester, the majority of the students completed both the tutorial group project and the survey. Out of the 157 students that make up the cohort, 10 students were awarded partial marks as they only completed either the tutorial group project or the survey.
Findings

Towards the end of the semester, an anonymous and optional post-project survey was conducted to examine the efficacy of the project. 57 students (out of a total of 157) participated in this survey.

According to the survey results, 64.9% of the respondents agreed that “The Interesting Fact of the Brain” project has helped broaden their knowledge of various aspects of the brain outside from what is covered in lecture. One student commented that the project exposed him/her to the functions of the brain that are beyond the syllabus.

Another 57.8% agreed that “The Interesting Fact of the Brain” project helped increase their interest in the brain and biological psychology. The feedback also indicated that they responded positively towards the broad parameters set when it came searching for articles, giving them the freedom to do research on whichever aspect of the brain they found interesting. This finding supports the claim by Brozo (2005) that student engagement could be enhanced by encouraging them to explore their interest in the subject matter.

One other finding from the study suggests that students valued the project being grade-less. One student commented that “the absence of a grading system for this project also helps in not dampening the interest of students as grading is stressful and students would be more concerned in producing a good piece than genuinely exploring their interest [italics added].”

Limitations of the Study

Upon completion of the preliminary study, I observed that there were limitations which can be addressed if I were to run it again, such as:

a. Data from the survey could be supported by other sources of data (e.g. focus group interviews and written reflections by students) in order to increase the validity of the research findings;

b. The instructor having little to no control over the quality and level of complexity of articles selected. Since students were given complete freedom to choose articles that piqued their interest, we could not ascertain if the most popular article chosen was popular because it was the easiest to read, or because it was indeed intrinsically more interesting. Some refinements of the selection criteria may be necessary for future implementations of this approach.

c. This is a preliminary study. A more in-depth study could be carried out to measure the impact of the intervention on students’ intrinsic motivation using validated instruments.

Conclusion

In conclusion, the project has, at least for some of the students, helped expose them to various interesting research being carried out on the brain, as well as motivating them to learn more. The project has also motivated me to continue to explore ways to enhance my teaching on the subject in order to further engage students, in particular those who are new to biological psychology.

Finally, one interesting finding to reflect on—one students provided feedback that they liked the absence of “grading pressure” in the project and that, as one student puts it, “helps in not dampening the interest of the students as grading is stressful.” Good grades are important, and there is no denying that. However, there are times when the pressure of getting good grades may hinder the development of the love for learning. Therefore, further studies could be carried out to explore ways to incorporate a grade-less system in teaching while helping the students build some intrinsic motivation that will help them to pursue their interests and cultivate...
that most crucial element that makes one a lifelong learner: a passion for learning. In this regard, Albert Einstein stated it best:

    Education is what remains after one has forgotten what one has learned in school.

Endnote

1. A quick update on my continued quest to make the study of the brain interesting and relevant: I tried a different way of introducing the structure of the brain and its functions to students, this time through a group poster project. This was implemented in Semester 1 of AY2013/2014, in which students formed groups to create posters during tutorials. Students then presented these posters during the last lecture of the semester in a conference-like setting.

References


About the Author

Dr. Travellia F. Tjokro (pictured, left) teaches at the Department of Psychology and her teaching interests include biological psychology, cognitive neuroscience, cognitive neuropsychology, the brain lateralisation, as well as language development.