Lit Review

Studies have shown that reflective journals can have a negative impact on student experience and should therefore not be recommended for all students(1). There is however evidence to suggest that some students who engaged positively with a reflective journal had a better experience. Journals should be implemented with care and be carefully managed to not become tedious which led to frustration and a lack of engagement with students. Learning journals may be difficult to implement as they involve close attention and a tailored approach based on the student.

Tools like Scratch have been shown to be good starting tools for beginner programmers (2). The drag and drop nature allows students to see high level concepts in action without the need for accurate syntax. This may be a good starting point for developing a reflective tool. There are very little products that allow for integrated reflective learning for beginner programmers. Notetaking is a successful way for students to increase their level of self-evaluation and encourage reflection on material (3). Developing a reflective tool especially for beginner programmers should be developed with a simple beginner level language in mind and cover basic topics. This would avoid any external factors like the language semantics and complex topics effecting the results of the study.

In 1984 Kolb developed a four-stage reflective cycle which takes learning and applies it to new experiences(4). This starts with a concrete experience, reflection of the experience, making conclusions, and finally applying what has been learned onto new problems. Following this, in 1988 Gibbs extended Kolb’s work and developed a six-stage reflective cycle (5). This started with an experience, students would then contemplate their thoughts and feelings about that experience, evaluate the impact of the experience, analyse to understand the situation, concluded what has been learnt from the experience, and finally devise an action plan to deal with similar situations. Both Kolb and Gibbs developed patterns that focus on trying to understand what had happened and give an opportunity for students to pick out where they went wrong themselves. The key points are that the students themselves identified issues and then evaluated them. Although Gibbs adds relevant additions to Kolb’s reflective practices the fundamental rules that the student must identify and decide an appropriate response is present throughout.

Based on this initial research it is important to apply certain practises and techniques to the study. The project must not become mundane and tedious for the students as this could lead to a lack of engagement which would have a serious negative impact on the findings. In order to mitigate this the tool should allow students to accurately record their experiences through tools that allow for ease and accurate response in a short period of time as to not disrupt their focus. This could be in the form of multiple-choice questions, emote selection to determine a student's mood, automatic tools like time spent on tasks, as well as an options ability to save text responses. As students will be used to notetaking and it has been shown to increase their self-evaluation, note-taking will be an important part of the final tool. Evaluating the given response will be the most important aspect of the tool as this is where the student will benefit and have a positive impact. This could be done by a reflective cycle developed by Gibbs or Kolb tailored for the purpose of beginner programmers.

Bibliography

1 - chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.brettbecker.com/wp-content/uploads/2017/05/glanville2016reflective.pdf

2 - <https://link.springer.com/article/10.1007/s10758-018-9391-y>

3 - Chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://files.eric.ed.gov/fulltext/EJ1099318.pdf – study looking at correlation between students taking notes and self-reflection.

4 - [www.cambridge-community.org.uk/professional-development/gswrp/index.html](http://www.cambridge-community.org.uk/professional-development/gswrp/index.html)

5 - [www.ed.ac.uk/reflection/reflectors-toolkit/reflecting-on-experience#:~:text=The%205R%20framework%20for%20reflection%20will%20guide%20you%20through%20Reporting,sense%20of%20a%20learning%20experience](http://www.ed.ac.uk/reflection/reflectors-toolkit/reflecting-on-experience#:~:text=The%205R%20framework%20for%20reflection%20will%20guide%20you%20through%20Reporting,sense%20of%20a%20learning%20experience)

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