

UGFN1000 - In Dialogue with Nature (or UGFN for short), is a foundation course for all undergraduates. The students are required to read core texts before having discussions in a series of interactive tutorials on central issues, such as “What is life?” and “What is mind?” In our experience, students are very keen in reflecting on these cross-text issues. However, many of them, no matter having a background in science or not, find it difficult to have an in-depth discussion. This is mainly because: they lack the prerequisite knowledge beyond the texts; they misunderstand the concepts; or they have an inadequate comprehension of abstract ideas and are unable to connect different texts.

In view of this, we have developed two micro-modules, namely: “Scientific Enquiry of Life” and “Scientific Enquiry of Mind”, to flip the UGFN class, and thus provide eLearning supplements for better learning and teaching. A total of four short whiteboard animations have been tailor-made to explain essential knowledge and to clarify misconceptions that might arise. Instead of conventional video recordings of short lectures, whiteboard animations have been created to enrich the students’ learning experience. These consist of step-by-step illustrations with voiceover narrations to explain complicated and abstract ideas in an attractive and enjoyable way. The micro-modules are available online for students’ self-paced learning.

1st Micro-module – Scientific Enquiry of Life

- Animation 1 “What is life?” [4:36]: <https://youtu.be/S7b64RJf3ao>
- Animation 2 “Does DNA determine you?” [5:50]: https://youtu.be/12n_74Q-m1I

2nd Micro-module – Scientific Enquiry of Mind

- Animation 3 “Where does our mind come from?” [5:25]: https://youtu.be/T_5EsbjUok4
- Animation 4 “Do we have free will?” [6:38]: <https://youtu.be/NJB8XrXXon8>

The micro-modules were used in the three UGFN classes of the project members, which had over 350 students, in the first term of the 2016-17 academic year. The effectiveness of the micro-modules was assessed by quiz and questionnaire surveys. According to the questionnaire survey, over 85% students agreed that whiteboard animations are more interesting than lecture recording and they raised students’ interest in the tutorial discussion. The quiz survey suggested that the animations are effective to equip students with the prerequisite knowledge before tutorial classes. This aligned with the questionnaire survey that over 90% students agreed the animations are helpful for their understanding of the texts, clarifying concepts and gaining knowledge before tutorials. In general, more than 94% students were satisfied with these animations. The results are encouraging.

The micro-modules will be full-launched to be used in all UGFN classes starting from the second term of the 2016-17 academic year. Approximately 1800 students per term will be benefited from the micro-modules. In order to further enhance teaching and learning of UGFN, more micro-modules with whiteboard animations will be developed when resources are available. The skills developed in this project can also be used to produce similar micro-modules for the sister foundation course UGFH1000 In Dialogue with Humanity. At last, we would like to thank the IT Governance Committee for the generous

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