GAMIFICATION IN SCIENCE EDUCATION

What, Why and How?

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AIMS

Gamification can enhance dynamic learning, as students interact with concepts in multiple ways and deepen neural connections associated with each topic (Gee, 2003). Additionally, students view education as pleasurable, which fosters positive learning attitudes (Van den Berghe *et al.*, 2016). The most popular education Apps in the UK are game-based resources* (SimilarWeb, 2018) However, the immediate and long-term motivational potential of gamification in education is a relatively unexplored area.

This research attempted to explore any link between gamification and motivation of learners in science education.

METHODS

A retrospective research approach was used to obtain in-depth understandings of student engagements with gamification. Surveying Forensic Science learners studying Level-3 courses within a London FE college, revealed that many enjoy using game-like resources*. These were things like ***Kahoot***, ***Google Classroom*** and ***Quizizz***

However, interviews and questionnaires revealed that the majority of the cohort preferred traditional, lecture-style teaching

STRUCTURED INTERVIEW

QUESTIONNAIRE

RESULTS

Fig 1. Students' views on gamification uses

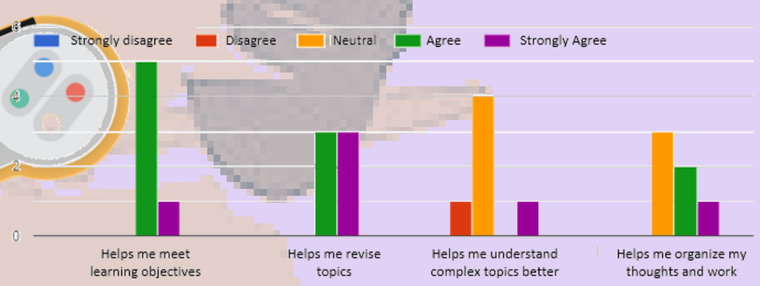

Figure 2 shows that 58% preferred teaching styles associated with traditional lecturing, whereas only 42% preferred gamified tools

Most students disagreed that the gamification tools helped them to learn complex topics, but found they did support revision very well

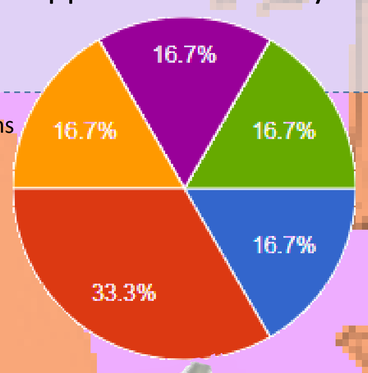

Fig 2. Motivations of Forensic students

Fig 3. Forensic Science Students

CONCLUSIONS

Science students, particularly 19+, prefer a traditional teaching approach when encountering new or complex topics. However most enjoy the games and see the use for them as revision tools

There is a hedonistic reward to playing games. However, to develop long-term motivations of learners, an additional element is required. Mastery of learning strategies within individuals can enable them to tackle diverse education obstacles in academia. Gamification's hedonistic elements could limit developments of deeper motivations in students

REFERENCES

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Figures 1&2: Laurencin, J. (2019) Is Gamification A Technique For Motivating Learners? *Oxford Brookes. Available online: https://drive.google.com/open?id=1qatjqIg7T7F-unpOJarj5tNFU8lEJBCm*

*Game-like resources defined in Laurencin, (2019)

Figure 3 [Image] Laurencin, J. (2018) Forensic Science Yr1 Students interacting in lessons