

UFCFHQ-45-3 Comprehensive Creative Technologies Project Proposal

GAMIFYING SEX EDUCATION

Zoe Rowbotham 18014180

1) Description

It has been claimed sex education in the UK is outdated, uncomfortable and non-inclusive with students leaving school without a basic understanding of their bodies, sex, consent and more. Many children and teachers find sex education uncomfortable, full of judgment and jokes; most students feel discomfort asking questions fearing ridicule by their peers (Pound 2016).

Gamification and game-based learning techniques are becoming increasingly popular in education, improving engagement, motivation, and retention (Kapp 2012).

This project proposes a way to improve engagement and understanding in sex education through game-based learning; producing a private, fun, inclusive way for secondary school children to receive sex education – with future goals to make sex education more enjoyable.

2) Research and Background

Sex and Relationships Education

Sex and Relationships Education (SRE) teaches children about sex, relationships, sexual health, consent and many more topics. Many students feel they have received inadequate sex education (Pound 2016, Ezaydi 2021), with several key reasons identified below:

1. Sex is an awkward topic for students and teachers resulting in a limited scientific-based curriculum.
2. Students often 'mess around' in SRE classes out of insecurity, feeling judged for not knowing information they feel they should.
3. Teachers are often unqualified or have their own values which interferes with a comprehensive sex education for students.
4. Sex is often regarded negatively; school curriculums often promote abstinence and fear.
5. SRE is outdated and irrelevant - Davies and Matley (2020) state many participants expressed views to support this.

Game Based Learning

Games have been used as learning tools for centuries (Cahill 2021) as games are centred around learning the rules and how to play. Falciani (2020) states "games are one of the earliest ways people engage in learning; babies and kids play games to discover the world and to learn." Game based learning uses games to enhance learning and engagement to reach a set of learning objectives; educational and 'serious' games are often developed around specific learning objectives or a single topic.

Kapp (2012) defines four main elements that make gamified experiences more engaging than traditional learning techniques; freedom to fail, interest curves, effective storytelling and immediate feedback. Kapp (2012) states successful implementation of gamification elements will lead to learner engagement. Gee (2008) also mentions key aspects of video games that encourage learning and engagement such as emotion, cost of failure and good game design.

Kiryakova, Angelova and Yordanova (2014) provide ideas on how to implement gamification into education including evaluations of existing gamification software, identifying the features they implement. While the techniques spoken about are stereotypical, the steps to achieve gamification are useful to note.

A 2018 study attempted to investigate how game-based learning and gamification could improve sexual health education (Haruna et al, 2018). Haruna et al used three methods (traditional teaching, game-based learning and gamification) with three groups of students and found those exposed to gamification and game-based learning were more motivated with a greater increase of knowledge about sexual health. Haruna et al concluded "GBL and gamification-based approaches allow [students] to learn and ask questions at their own pace and explore the subject of sexual health education in a private setting, without humiliation or asking questions that offend others."

Mobile, Video Games and Young People

Gaming is popular amongst young people; in the UK, 75% of children aged 5-15 played video games in 2020 (Ofcom 2021). Mobile devices are also a popular platform for gaming, Ukie (2021) found in their annual valuation of the UK games industry that mobile games revenue increased by 21.3%, as seen in figure 1, second only to digital console revenue.

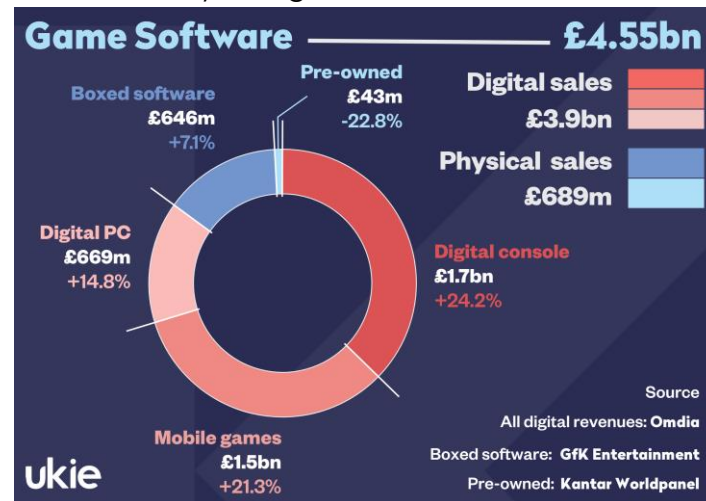


Figure 1 – Revenue of game software in 2020 (Ukie 2021)

Ofcom's 2021 Online Nation report found 95% of children owned a mobile phone by age 13 (Ofcom 2021), meaning almost universal ownership in young people. In Ofcom's 2020 report 86% of children aged 8-15 played video games on a mobile device (Ofcom 2020). This access and popularity of mobile games to children means creating an educational mobile game would have a large potential audience of young people.

3) Project Objectives

- Produce an interactive learning experience to aid in sex education using gamified methods. (Issues 3 and 5)
- Design a safe, un-biased and comfortable environment for secondary school children to learn about sex. (Issues 1, 2 and 4)
- Assess methods to measure the levels of engagement offered by the application and the approaches used.

4) Research Objectives

- Research current SRE curriculums and establish what topics can be included.
- Research gamification and game-based learning methods and identify which should be used.
- Identify tools and platforms that will support delivery of the project artefact.

5) Learning Objectives

- Learn the effectiveness of gamification, game-based learning and their educational use.
- Learn modern gamification and game-based learning techniques.
- Learn how to implement gamification and game-based learning.

6) Methods, Techniques, Tools and Processes

The project will be managed with a Gantt chart, which can be used to track progress against a deadline (Tran 2015). Individual tasks will be managed in more detail in Trello, an online management tool for visualising projects (Trello 2021). The Gantt chart and Trello board will be easily adaptable as the project develops, accommodating unexpected delays and plan changes.

Version control is essential to code development and is used to track code changes (Harvie 2018); a Git repository will be created on GitHub. Git Flow (Driessen 2010) will be followed to maintain the repository's structure; following the Git Flow process also gives a clear understanding of milestone completion.

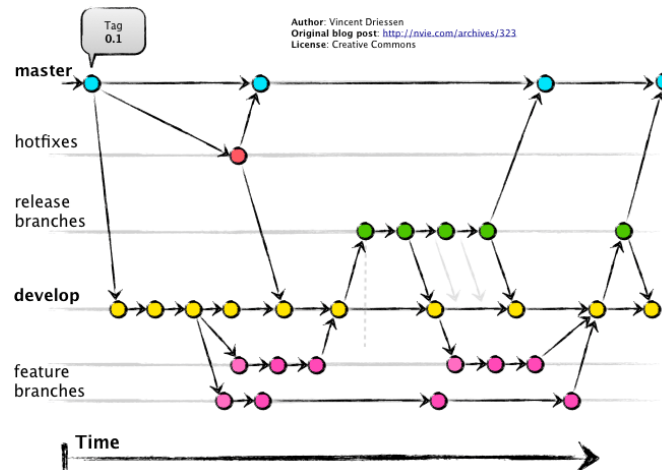


Figure 2 Git Flow Structure (Driessen 2010)

Agile Development will be allowing iterative and flexible development. Agile Development is a continuous process of improvement and testing to assure quality of a project (Mezquita 2020).

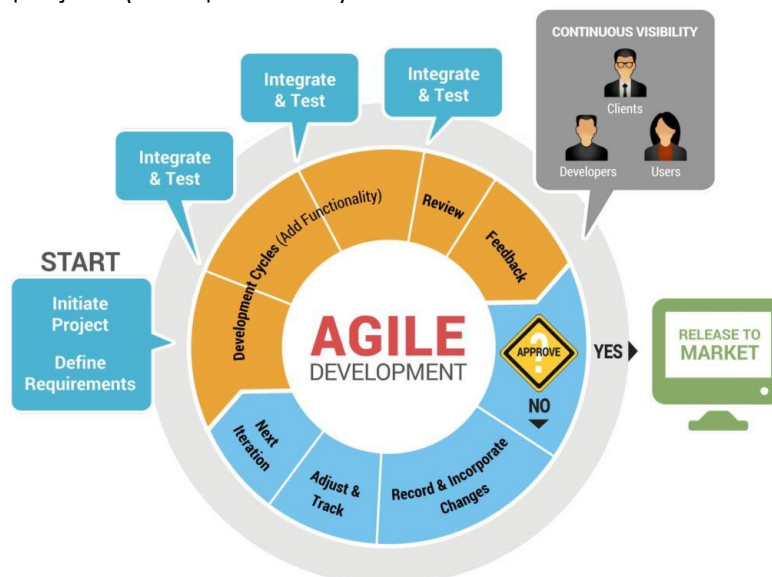


Figure 3 Agile Development Process (Mezquita 2020)

The artefact will be developed using Unity; a well-documented and easy to use game engine designed around flexibility. Unity has rapid prototyping tools allowing focus on implementation of the project's game theory. Visual Studio 2019 will be used as the IDE for C# scripts, providing integration and support with Unity.

7) Risks and Issues

| Risk | Mitigation | Contingency |
|---|---|--|
| Unable to include all topics of SRE into a single project. | Identify important topics to avoid feature creep. | Research to identify established gamified approaches. |
| Unable to confirm satisfactory artefact without focus groups of target demographic. | Aim for teacher user testing rather than children. Perform qualitative over quantitative testing. | Define measurable success goals to be checked upon project completion. |
| Gamifying techniques implemented unsuccessfully. | Regularly iterate on design and implementation with feedback. | Pivot research to simpler, well-used gamification techniques. |

8) Specialist Resources and Support Required

N/A

9) Sources and References

Cahill, G. (2021) Why Game-Based Learning. Available from: <https://thelearningcounsel.com/article/why-game-based-learning> [Accessed 17 July 2021].

Davies, E and Matley, F. (2020) Teachers and pupils under pressure: UK teachers' views on the content and format of personal, social, health and economic education. *Pastoral Care in Education* [online]. 38 (1), pp. 4-22. [Accessed 26 October 2021].

Driessen (2010) A Successful Git Branching Model. nvie [blog]. 05 January. Available from: <https://nvie.com/posts/a-successful-git-branching-model/> [Accessed 19 October 2021].

Ezaydi, S. (2021) How Sex Education in UK Schools Is Letting Down Young Women & Cultivating Misogyny. *Glamour Magazine* [online]. 02 September. Available from: <https://www.glamourmagazine.co.uk/article/sex-education-uk-schools> [Accessed 05 October 2021].

Falciani, I. (2020) Game-Based Learning: What Is It? GBL vs Gamification: Types and Benefits. *Teacher Academy* [blog]. 02 July. Available from: <https://www.teacheracademy.eu/blog/game-based-learning/> [Accessed 17 July 2021].

Gee, J, P. (2008) Learning and Games. In: Gee, J, P., ed. (if applicable) (2008) *The Ecology of Games: Connecting Youth, Games, and Learning* [online]. Cambridge, MA: The MIT Press, pp.21-40. [Accessed 03 June 2021].

Haruna, H. and Hu, X. and Chu, S. and Mellecker, R. and Goodluck, G. and Ndekao, S, P. (2018) Improving Sexual Health Education Programs for Adolescent Students through Game-Based Learning and Gamification. *International Journal of Environmental Research and Public Health* [online]. 15 (9). [Accessed 03 June 2021].

Harvie, L. (2018) Version Control – Why Do We Need It?. Medium [blog] 17 December. Available from: <https://medium.com/@lanceharvieruntime/version-control-why-do-we-need-it-1681f4888cec> [Accessed 19 October 2021].

Kapp, K, M (2012) Games, Gamification and the Quest for Learner Engagement. T + D, 66 (6), 64-69. [Accessed 02 June 2021]

Kiryakova, G., Angelova, N. and Yordanova, L. (2014) Gamification in Education [online]. Proceedings of 9th International Balkan Education and Science Conference.

Mezquita, T. (2020) Agile Development Methodology. CyberHoot [blog]. 01 June. Available from: <https://cyberhoot.com/cybrary/agile-method/> [Accessed 19 October 2021].

Ofcom (2020) Online Nation [online]. London: Ofcom. Available from: https://www.ofcom.org.uk/__data/assets/pdf_file/0027/196407/online-nation-2020-report.pdf [Accessed 12 October 2021].

Ofcom (2021) Online Nation [online]. London: Ofcom. Available from: https://www.ofcom.org.uk/__data/assets/pdf_file/0013/220414/online-nation-2021-report.pdf [Accessed 12 October 2021].

Pound P, Langford R, Campbell R. (2016) What do young people think about their school-based sex and relationship education? A qualitative synthesis of young people's views and experiences. BMJ Open [online]. 6 (9). [Accessed 05 October 2021].

Tran, L. (2015) The Importance of the Gantt Chart and the Critical Path for Project Management. InLoox Blog [blog]. 06 February. Available from: <https://www.inloox.com/company/blog/articles/the-importance-of-the-gantt-chart-and-the-critical-path-for-project-management/> [Accessed 19 October 2021].

Trello (2021) About Trello. Available from: <https://trello.com/en-GB/about> [Accessed 19 October 2021].

Ukie (2021) UK Games Industry Market Valuation 2020. Available from: <https://ukie.org.uk/news/uk-games-industry-valuation-2020> [Accessed 26 October 2021].

10) Weekly Project Plan

(see overleaf)



