Online learning and fun to enhance enjoyment and retention in Higher Education during COVID-19

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Abstract

Recent studies highlight that the key challenges in Education will be improving students' retention and performance. UNESCO indicated that COVID-19 virus affected more than 1.5 billion of learners, which refers to 91.4% of total enrolled learners in 192 country-wide closures.

Understanding the components that influence students' enjoyment of online learning is the key objective of the project OLAF – Online Learning And Fun. Although there is a growing body of research about students' engagement with distance education, a research gap exists concerning the value of fun in online learning to promote students' pleasurable experience with successful achievement. This work describes the OLAF methodology underpinned by RRI – Responsible Research and Innovation and open science which was implemented in the UK and will be used in various studies in Brazil. This exploratory study focused on 190 participants (109 women) from Higher Education from different universities in Brazil members of Colearn Community including undergraduates, postgraduates, teaching staff, educational consultants and institutional policy makers. Findings indicated that the majority agreed that online learning should be fun and only 5% believed that fun within learning could take the focus off their studies and result in distraction. In addition, principal component analysis revealed 3 groups: socio-constructivist learning with fun; constructivist learning with no fun and transmissive learning with fun that disturbs.

KEYWORDS: fun, online learning, RRI, four levels of fun, enjoyment, retention.
Introduction

Online learning has become a fundamental part of educational systems during COVID-19. More than 1.5 billion of students were affected (UNESCO, 2020) due to the shutdown of universities across the globe. A key issue for teaching staff and learning designers is to rethink about relevant curriculum with meaningful and pleasurable learning experiences for all students based on their needs, priorities and contexts affected by the pandemic. A vital approach to explore the challenges in education with societal participants during adversity is RRI – Responsible Research and Innovation, for better support of scientific and technological development with and for society.

This exploratory study based on RRI is part of a research project OLAF – Online Learning and Fun. OLAF is a large-scale research project to examine learners’ views about fun in learning supported by technologies in Higher Education. OLAF has three objectives underpinned by RRI: 1. to refine a self-reflective instrument for generating a large database with participants; 2. to cocreate a set of recommendations for innovating pedagogical practices through participative methods; 3. to support the development of new research studies to innovate the educational curriculum practices and policies at institutional and national levels.
This initial research work focuses on examining students’ views about fun in online learning. A growing body of research about students’ engagement with distance education highlights the importance of fun to enhance their participation, interest and satisfaction of learning experience. However, a research gap exists concerning the value of fun in online learning to promote students’ enjoyment and successful achievement. Literature is very limited about the meaning and value of fun in learning. This research is original in examining students’ beliefs and attitudes about engagement and enjoyment of online learning during COVID-19.

The value of Online Learning and Fun in Higher Education

Improving students’ access to Higher Education including their retention for degree completion with successful attainment and career progression has become fundamental for them to succeed as a competent professional capable to shape a sustainable world. Table 1 is based on the AdvanceHE’s framework, which includes four challenges connected to four adapted goals: 1. emancipatory inclusion supported by flexible and meaningful learning, collaboration for social innovation and lifecycle approach. 2. Optimal belonging enhanced by challenges aligned with skills through a real-life curriculum for all, inclusive technologies, quality and diversity. 3. Expert partnership supported by data-driven practice, high expectations, peer-led learning. 4. Responsive flexibility with outreach to the profession, engagement and sense of belonging and employability.

According to AdvanceHE (2016, p.2), “students cannot learn or progress unless they are engaged; students who feel they belong more easily succeed. Developing an inclusive institution and embedding inclusive values and approaches within learning and teaching policy and practice, is a process that requires a wide range of stakeholders to engage and collaborate to ensure student success.”

Is fun relevant for engaging students with meaningful and effective online learning with a sense of belonging?
Table 1 – Higher Education priorities for a sustainable world  
Source: Adapted from Advance HE 2020

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Goals</th>
<th>Components to shape a desirable future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to HE</td>
<td>Emancipatory Inclusion</td>
<td>• Flexible and meaningful learning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Collaboration for social innovation</td>
</tr>
<tr>
<td>Retention for degree completion</td>
<td>Optimal Belonging</td>
<td>• Real-life Curriculum for all</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Inclusive technologies</td>
</tr>
<tr>
<td>Successful Attainment</td>
<td>Expert Partnership</td>
<td>• Data-driven practice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• High expectations</td>
</tr>
<tr>
<td>Career and academic Progression</td>
<td>Responsive Flexibility</td>
<td>• Outreach to the profession</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Engagement and belonging</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Employability</td>
</tr>
</tbody>
</table>

Previous study of OLAF (Okada & Sheehy, 2020) revealed four levels of fun illustrated by Figure 1.

- **Optimal fun** is the joy of being fully involved in learning, moving towards full capability and creativity.
- **Individual fun** is the happiness of fulfilling accomplishments, supported by clear goals and strategies.
- **Collaborative fun** is the happiness of making connections with others, creating social bonding and developing group identity.
- **Emancipatory fun** is the joy of being curious, able to search and discover whilst being critically aware.

This model provided Recommendations:

- To promote optimal fun in learning, teaching staff can create opportunities for students to enjoy developing skills aligned with “just right” challenges.
- To support individual fun through constructivist learning, teaching staff could offer methods and resources for students to build their own understanding and work at their own pace and time.
• To engage students with collaborative fun, through a socio-constructivist approach, teaching staff need to provide meaningful activities for students to interact with others and co-create knowledge.

• To foster emancipatory fun through socio-cultural learning, teaching staff with students could together promote opportunities for self-transformation through real-life experience.

And also key potential benefits

• Optimal fun will help students feel good with more autonomy in meeting learning objectives and get the right balance between life, working and learning.

• Individual fun will help students feel productive with more autonomy to think and solve problems independently.

• Collaborative fun can enable students to feel supported with more autonomy to talk and collaborate effectively, share experiences and practices with confidence and enjoy learning together.

• Emancipatory fun will help learners to feel empowered; and increase their intrinsic motivation through an autonomy to reflect and act, intervene and overcome difficulties.

The model “four levels of fun” was developed from data generated with a self-reflective instrument designed for students to reflect about their epistemic views of learning and opinion about fun. The self-reflective instrument applied in the UK enabled to identify three components: socio-constructivist learning with fun; constructivist learning with fun that disturbs and transmissive learning with no fun.

This current study presents the method used in the UK which will be adapted and implemented by various HE institutions for exploring their students’ views and awareness about their ways of learning and opinions about fun. Data generated will be used to better develop recommendations to promote students’ access, retention, attainment and progress in Higher Education.
RRI with open science
Methodology

The key elements of this RRI study were:

- **Diversity and inclusion**: the study engaged distinctive representatives of society
- **Transparency and openness**: objectives, methodology, database and preliminary and final findings were open to all participants
- **Anticipation and reflexivity**: participants were informed about no implications for (non) participation; Quantitative and Qualitative data were generated through a self-reflective instrument
- **Adaptation and responsiveness**: a variety of approaches were used for recruitment during the COVID-19 pandemic and the anonymous instrument was adapted to enable optional withdrawal.

Participants

This study involved approximately 1583 students who received an invitation - interactive magazine describing to participate in this research through Colearn Community WhatsApp, FaceBook and Twitter. Participants who completed the self-reflective instrument and an open question were 190 (109 women) from different universities in Brazil including undergraduates, postgraduates, teaching staff, educational consultants and institutional policy makers.

Procedures

February 2020 project proposal received ethical approval by HREC committee of the Open University

March 2020 database generated by 630 students were analysed with mixed methods approach

April 2020 an article with preliminary findings were published in OpenLearn platform for public engagement
May 2020 a scientific paper was developed and submitted to a Journal

June 2020 paper published and questionnaire translated to Portuguese and reviewed by PUC-SP in Brazil

July 2020 data generated supported by Colearn community, using OpenLearn and social media with preliminary outcomes discussed with participants in two Live Events in WebinarJam and YouTube.

August 2020 methodological approach presented at LSME RRI Conference

From Sep-Nov. Instrument validated will be used by institutions in Brazil who will produce distinctive research with the common self-reflective instrument. Opendata and open outcomes will be available in open repositories of the Open University: ORDO (data) and ORO (papers)

In this preliminary study in Brazil, a similar instrument – that were slightly extended – were provided for volunteer students to reply in Qualtrics:

1. a structured self-reflective questionnaire (SHEEHY et al., 2019b)
2. an open and optional question for students to present their individual points of view (What are your views about Fun and Online Learning?) for them the freely express themselves about the relationships or effects on fun and learning based on their beliefs and lived experiences.

Findings and discussion

Descriptive Analysis of the quantitative questionnaire data indicated largely positive views about fun and learning.
To learn affectively students must enjoy learning. Fun activities can get in the way of student learning. To learn effectively students must be happy to learn. Learning should involve fun.

44% mentioned that is about wellbeing, 30% self-improvement, 20% successful achievement, 6% motivation, 3% enjoyment with friends and 1% pause for distracting. Nobody found fun is waste of time. The majority agreed that online learning should involve fun and to learn effectively students must be happy to learn. Only 5% believed that fun within learning can get in the way of student learning; and less than 10% disagreed that to learn effectively students must enjoy learning.

The study also examined the validity of the adapted instrument developed by Sheehy et. al. (2019a), which was used as a self-reflection artefact within the context of online education. The quantitative data was analysed using SPSS version 24 with a sample size of 190 and 25 statements.

Cronbach’s alpha 0.718 confirmed that the principal components analysis (PCA) were supported. The instrument proved to be reliable for this study. Table 1 illustrates factor analysis with principal components and unrotated solution, which obtained three relevant groups: (1) socio-constructivist learning with fun; (2) constructivist learning with no fun and (3) transmissive learning with fun that disturbs. The Kaiser-Meyer-Olkin score of 0.730 indicated sample adequacy and the Bartlett’s sphericity test (Chi-square=1001.270 with 210 degree of freedom, Sig. .000<0.5) confirmed consistency. The PCA unrotated (Table 1), informed by the theories explicated in this research, enabled us to examine the qualitative data (the open question).
<table>
<thead>
<tr>
<th>Sets</th>
<th>Variables</th>
<th>Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socio-constructivism</td>
<td>CollaborativeActivities</td>
<td>3. Students learn best through collaborative activities.</td>
</tr>
<tr>
<td>Collaborative learning</td>
<td>TalkProductively</td>
<td>4. Helping students to talk to one another productively is a good way of teaching</td>
</tr>
<tr>
<td></td>
<td>SocialActivities</td>
<td>1. Meaningful learning occurs when students are engaged in social activities</td>
</tr>
<tr>
<td></td>
<td>SocialProduction</td>
<td>2. Learning can be defined as the social production of knowledge</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traditional</td>
<td>TeachingFacts</td>
<td>7. The teacher’s role is to teach facts.</td>
</tr>
<tr>
<td>teaching centered</td>
<td>TeachingProblemAnswer</td>
<td>6. Teaching should be built around problems with clear, correct answers.</td>
</tr>
<tr>
<td></td>
<td>TeachHowtoSolve</td>
<td>5. Effective/good teachers demonstrate the correct way to solve a problem.</td>
</tr>
<tr>
<td></td>
<td>LearnOwnEffort</td>
<td>15. How much students get from their learning depends mostly on their effort</td>
</tr>
<tr>
<td></td>
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<tr>
<td>Constructivism</td>
<td>LearnThinkSolve</td>
<td>10. Students learn best by finding solutions to problems on their own.</td>
</tr>
<tr>
<td>Learning centered</td>
<td>LearnFindSolution</td>
<td>11. Students should be allowed to think of solutions to practical problems themselves before the teacher shows them how they are solved.</td>
</tr>
<tr>
<td></td>
<td>Learning based on Inquiry</td>
<td>8. The teacher’s role is to support students to develop their own questions and inquiry.</td>
</tr>
<tr>
<td></td>
<td>LearnReasoning</td>
<td>12. Thinking and reasoning processes are more important than specific curriculum content.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Banking</td>
<td>AbilityFixed</td>
<td>13. Students’ educational potential is fixed at birth.</td>
</tr>
<tr>
<td>(pedagogy of oppressed)</td>
<td>AbilityNOTChange</td>
<td>14. Students who begin university with ‘average’ ability do remain ‘average’ throughout their studies</td>
</tr>
<tr>
<td></td>
<td>TeachHomogenous</td>
<td>16. All students should be taught in homogenous classes according to their intelligence.</td>
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<tr>
<td></td>
<td>TeachSingleWay</td>
<td>17. I believe there should be a single teaching method applicable to all learning situations.</td>
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</tr>
<tr>
<td>Emancipatory</td>
<td>LearnInDiversity</td>
<td>22. Students and teachers should participate in learning from diversity together</td>
</tr>
<tr>
<td>Learning</td>
<td>DemocraticVLE</td>
<td>23. The learning environment should be a democratic space.</td>
</tr>
<tr>
<td></td>
<td>ActionRelexionPraxis</td>
<td>24. Learning occurs when students reflect on their action in a diverse world for their transformation</td>
</tr>
<tr>
<td></td>
<td>FunCuriosityFinding</td>
<td>25. Fun is part of curiosity and discovery.</td>
</tr>
<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td>Fun</td>
<td>LearnersHappy</td>
<td>18. To learn effectively students must be happy when are learning</td>
</tr>
<tr>
<td></td>
<td>LearnWithFun</td>
<td>19. Learning should involve fun</td>
</tr>
<tr>
<td></td>
<td>EnjoyLearning</td>
<td>09. To learn effectively, students must enjoy learning</td>
</tr>
<tr>
<td></td>
<td>FunHampers</td>
<td>20. Fun activities can get in the way of student learning</td>
</tr>
<tr>
<td></td>
<td>NotEnjoyOnlineLearning</td>
<td>21. Online Learning is not fun</td>
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</tbody>
</table>
Qualitative data about the value of fun in online learning revealed 3 sets of themes with 9 categories in total

**Theme 1: fun is part of learning in a responsible and creative way.**

- *We all have to have fun, but always responsibly.*
- *Fun is part of learning, however, cannot lose the focus on the main objective that is learning.*
- *It is a moment of relaxation. However, this moment can be used to apprehend knowledge in a fun and creative way.*

**Theme 2: fun in learning is feeling pleasure with lightness and joy**

- *Fun for me is making serious activities lighter*
- *You feel good about what you’re doing. It doesn’t necessarily need a laugh, but a sparkle in the eye!*
- *Something you do with pleasure, with lightness, with joy.*

**Theme 3: fun in learning is essential to reach the human brain and soul**

- *Fun is in summary what reaches the brain and animates the soul*
- *To have fun is to be human in its essence*

**Final Remarks**

Understanding students’ needs for more inclusive and future-oriented strategies are fundamental especially in five countries who are participating of a large funded project CONNECT – open schooling with fun participatory science in Brazil, Spain/Catalunya, Greece, the UK, and Romania. The COVID-19 pandemic has affected Digital Education in network and at distance in various ways. There are more concerns with students’ achievement – knowledge acquisition (short term) rather than scientific skills development (long term). There are also more resources and support online but limited opportunities for the most needed students, who do not have access to the internet nor digital devices. There will be more educational organisations looking for:
• More high-quality learning resources linked to the curriculum
• More enjoyable activities – fun and relevant – that are meaningful for students’ learning
• More opportunities to help students become more confident, more interested in, and more capable to succeed in science.
• More strategies to deal with outbreaks and foster scientific and digital literacy
• More support through cooperation and partnerships to help a large number of disadvantaged students, educating girls and the various minority groups.

This study aimed at supporting those organisations and provides four recommendations:

1. Increase students’ awareness about fun in learning
2. Create opportunities for different types of fun
3. Rething about learning design to increase optimal experience
4. Explore the role of technologies to enhance fun in online learning

Acknowledgments

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