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## THE VALUE OF FUN IN ONLINE LEARNING: A STUDY SUPPORTED BY RESPONSIBLE RESEARCH AND INNOVATION AND OPEN DATA

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### ABSTRACT

Humanistic learner-centred curriculum approaches that use new technologies are vital as a response to a world dominated by grand challenges such as the COVID-19. This article examines the value of fun in distance education to promote student success and retention. Although the experience of fun is part of human nature, research in this area is sparse. This mixed methods study, informed by Responsible Research and Innovation (RRI) and open data, focused on 206 students including teachers, consultants and education professionals. The results indicated that 91% of participants valued fun in online learning; highlighting well-being, motivation and performance. However, 17% believed that fun within learning could take the focus off their studies and result in distraction or loss of time. This article introduces the new concept of emancipatory fun and offers some educational recommendations.

**KEYWORDS:** Higher Education; Online learning; Fun; COVID-19; RRI.

### *O VALOR DA DIVERSÃO NA APRENDIZAGEM ONLINE: UM ESTUDO APOIADO NA PESQUISA E INOVAÇÃO RESPONSÁVEIS (RRI) E DADOS ABERTOS*

#### RESUMO

*Abordagens curriculares mais humanistas centradas no aprendiz com tecnologias são vitais como uma resposta para o mundo dominado por grandes desafios, tais como a COVID-19. Este artigo examina o valor da diversão na Educação a Distância visando promover o sucesso dos estudantes e reduzir a evasão. Embora a experiência da diversão seja parte da natureza humana, pesquisas nessa área são escassas. Este estudo de métodos mistos apoiado pela Pesquisa e Inovação Responsáveis (RRI) e dados abertos focou 206 estudantes, incluindo professores, consultores e profissionais da educação. Os resultados indicaram que 91% dos participantes valorizaram a aprendizagem on-line divertida, destacando bem-estar, motivação e desempenho. Entretanto, 17% acreditaram que a diversão na aprendizagem poderia tirar o foco dos estudos, resultando em distração ou perda de tempo. Este artigo introduz o novo conceito de diversão emancipatória e oferece algumas recomendações.*

**PALAVRAS-CHAVE:** Ensino Superior, Aprendizagem on-line, diversão, COVID-19, RRI.

### *EL VALOR DE LA DIVERSIÓN EN EL APRENDIZAJE EN LÍNEA: UN ESTUDIO APOYADO POR LA INVESTIGACIÓN E INNOVACIÓN RESPONSABLE Y LOS DATOS ABIERTOS*

#### RESUMEN

*Los enfoques curriculares humanistas centrados en el alumno que utilizan nuevas tecnologías son vitales para responder a un mundo dominado por grandes desafíos como COVID-19. Este artículo*

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*examina el valor de la diversión en la educación a distancia para promover el éxito y la retención de los estudiantes. Aunque la experiencia del entretenimiento es parte de la naturaleza humana, la investigación en esta área es escasa. Este estudio de métodos mixtos, informado por Investigación e Innovación Responsable (RRI) y datos abiertos, se centró en 206 estudiantes, incluidos maestros, consultores y profesionales de la educación. Los resultados indicaron que el 91% de los participantes valoraron la diversión en el aprendizaje en línea; destacando el bienestar, la motivación y el rendimiento. Sin embargo, el 17% creía que aprender diversión podría desviar la atención de sus estudios y provocar distracción o pérdida de tiempo. Este artículo presenta el nuevo concepto de diversión emancipadora y ofrece algunas recomendaciones educativas.*

**PALABRAS CLAVE:** Educación superior; aprendizaje en línea; diversión; COVID-19; RRI.

## 1 INTRODUÇÃO

The experience of Fun is inherent to human nature (HOLMES; DOUGLAS, 2012) and it is noted across different cultures and times (SHEEHY et. al., 2019a; 2019b). However, literature is limited and an in-depth definition of fun remains elusive, as does a clear picture of the value and effects of “fun in education”; that is, “enjoyment of learning”. Understanding the components that influence students’ engagement and satisfaction, related to fun, with online learning is increasingly important for distance educators and students themselves. Researching these factors holds the promise of facilitating a greater engagement and appreciation by students within online learning contexts. The importance of this research challenge has been foregrounded by in the current context in which we live.

Due to the outbreak of the COVID-19 virus, many schools and universities were closed. According to UNESCO (2020) approximately 1.7 billion students have been affected in more than 150 countries. Distance learning institutions that offer blended learning or utilize a degree of face-to-face learning activities, or require fieldwork, were also affected. The vast majority of schools and universities worldwide have the great challenge of planning, delivering and improving online learning. It is a disruptive time, as these new alternatives must be provided to support online education at home. Currently, several universities that did not previously offer distance learning face an extra workload, as must develop online learning programs as quickly as possible to reduce the impact on their curriculum. UNESCO (2020) has made available a list of educational apps, platforms and resources to help family members, teaching staff, schools and universities in order to facilitate student’s learning, including social assistance and interaction during periods of school closure.

Universities in Europe, South America and Africa have pointed out that there are many

students as well teaching staff who were not prepared to successfully replace their face-to-face learning with distance learning activities (OKADA, 2020). Whilst course teams need to make their educational programs available online in a short time, they also need to understand how to improve students' learning experience in these difficult times through utilizing research about their views.

In this article, we highlight that the contemporary world, dominated by the grand societal challenges (EC, 2016) that affect health, environment and economy, locally and globally, requires a more humanistic reflection on education, which strives for an educational experience that is enjoyable, has a positive impact on wellbeing and critical consciousness. In this context the importance of fun is raised. Therefore, this study investigates the theorized meaning and value of fun in education, as well empirical evidence of the relationships of fun in online learning to inform practical recommendations. This study is underpinned by Responsible Research and Innovation (RRI) (EC, 2020), a methodology that involves research participants in discussing the research process and results. RRI's goal is to promote greater involvement of members of society with scientific research to broaden understanding and improve the decision-making process (OKADA; SHERBORNE, 2018).

## 2 THEORETICAL PRINCIPLES FOR FUN AND LEARNING

Research on fun is disparate in nature and contexts. Consequently, the term fun is presented with different meanings; and there is no common definition. Likewise, the effect of fun on learning is disputed by researchers, who hold different perceptions of fun and adopt different methodologies related to their diverse aims and contexts.

Etymologically, the English noun “fun” dates from the mid-17th century, originating in North Germanic “*fonne*” and “*fon*”, which means “simple, foolish, silly, unwise” and “cheat, trick, hoax” a noun usually associated to make people laugh. From the 18th century, fun as a verb from “*fonna*” referred to “make a fool of” or “make fun of” - (to be/become somebody that other people laugh at). By the mid-19th century “fun” also became used as an adjective “enjoyable”, which brought a new meaning. (ETYMONLINE, 2020). Currently “fun” also means “pleasure and enjoyment, entertainment” (CAMBRIDGE, 2020). In addition, fun translated to Portuguese becomes “*diversao*”, from the Latin “*divertere*”, which is a combination of DIS-, “sideways”, and VERTERE, “turn”. “*Divertere*” is similar to “divert”

and means “to change sides, to turn in different directions”. Linguistically, its meaning is extended to “diversion, recreation, distraction and pastime” (HOLANDA, 2010) and, these meanings generally associated with feeling good, are found in both English and Portuguese languages.

Within Educational research the relationships between fun and learning are also ill-defined and contested. Some studies indicate a positive relationship, associated with terms such as enjoyment, intrinsic motivation, and feeling good (DEWAELE *et al.*, 2016; LAMM, 2009). In other instances, a negative relationship is suggested, where fun is for example a distraction from serious learning, a waste of time; and too much focus on fun can lead to a lack of focus on learning (WALSETH, 2018; p.237).

This study focuses on interpreting some theoretical principles of renowned educational researchers to examine the polysemic meanings of fun in the context of learning. Our aim is to *divertere* - to change sides and seek a different direction, towards fun as “feeling good (wellbeing) through critical consciousness”. This perspective is grounded in Freire’s concept of emancipatory education and, informed by the work of Csikszentmihalyi’s Flow, Piaget’s cognitive equilibrium, and Vygotsky’s Zone of proximal development, constructs the novel concept of “emancipatory fun”. A central stance within this perspective is the notion that our educational endeavours should not divorced or excised from experiences as human beings in the world. As Freire (1967, p. 123, emphasis added) points out,

There cannot be a pedagogical theory that implies the ends and means of educational action, which is exempt from a concept of “human being” and the world. In this sense, there is no neutral education. If, for some people, the “human being” is a being of **adaptation to the world** (taking the world not only in a natural, but structural, historical-cultural sense), their educational action, their methods, their objectives will suit to that conception. If for others, the “human being” is a being of **transformation of the world**, their educational what-to-do “changes sides” to follow a different path. If we see humans as a “thing”, our educational action is processed in mechanistic terms, which results more and more **domestication** of the “human being.” If we face humans as a person, our doing will be increasingly **liberating**.

A consequence of Freire’s argument is that if we are to examine the value of fun in education then an interrogation of the epistemic views of humans is required: Is the conceptualisation of fun in learning serving the purpose of domesticating or liberating learners? Addressing this question enables a reflection on the pedagogical “what-to-do” in distance education, and by taking into account the students’ perspectives and beliefs potentially increases

their awareness about “the possibilities of humanism” in Education (FREIRE, 1984, p. 30).

Within the scientific literature about fun and learning, some studies suggest that fun has a positive impact and/or value. A key argument for these scholars is that fun (enjoyable and self-motivating) learning is more engaging and thereby effective than “sterile (boring) learning” (ELTON-CHALCRAFT; MILLS 2015, p.482). Interpreting this perspective through the etymological lens of *divertere*, the value of fun is to divert – to take learning to different (opposite) sides, away from boredom, anxiety, unproductivity and uselessness.

In stark contrast, there are beliefs that “many believe that it is unsuitable in the “serious” business of Higher Education”; (WHITTON; LANGAN, 2018, p.1002). From this perspective fun is a mere distraction and waste of time; which diverts - takes the student away from the necessarily arduous and laborious work of learning. Consequently, this perspective highlights that the absence of freedom and fun is necessary for learning. In contrast, the *divertere* perspective see these constraints as factors associated with discipline problems (GLASSER, 1998), necessitating authoritarianism (GOVENDER; SAGREE & RESHMA, 2014) and generating deep frustration of students. Authoritarian teaching has a lot in common with banking education (FREIRE, 1985); the pedagogy of the silenced, the epistemicide (SANTOS, 2001) and students’ corporal punishment, for example, spanking of students with paddles. The echoes of these ingrained beliefs of the recent past can still be discerned internationally. For example, the Centre for Education Economics highlights that making lessons fun does not help students learn. Fun is considered unnecessary and of negative value for many institutions; in particular, because the belief that rigorous traditional teaching methods are described as the most effective, even if they are not particularly “enjoyable” for students (SAHLGREN, 2018).

On the other hand, researchers adopting a different side of analysis have identified positive effects of fun on learning and highlighted the beneficial physiological effects it produces for example, stress reduction, and improved alertness and performance (BISSON; LUCKNER, 1996). This perspective highlights that this useful effect on learning is associated with pleasure, engagement and the ideal experience – “flow” (CSIKSZENTMIHALYI, 2020). “Flow” presented by Csikszentmihalyi (2015), refers to the ideal state of inner experience that integrates an exciting feeling of transcendence, including creativity, joy, total involvement. The ideal or optimal state is identified as a key component in pleasant achievement, when learners’ skills and challenges are balanced. A key role for an educator is to help learners achieve this

balance to build knowledge with challenges appropriate to their skills. Students' anxiety can increase when the challenge becomes too high compared to their skills, and boredom occurs when the challenge becomes too small compared to the skill level. As a result, both boredom and anxiety reduce students' performance negatively; then, affecting learning.

Complementary to this view of learning, as a process in which development arises through individual experiences of appropriate levels of challenge, is Piaget's theory of cognitive development (PIAGET; INHELDER, 1969). This is a constructivist theory in which knowledge and skills develop from a learner's interactions with their environment. Through these interactions, a learner gradually develops a complex cognitive mental models (schema) of the world and how it works. These interactions include a continuous process of assimilation and accommodation whenever a learner faces new situations that cause disequilibrium and require make sense of new concepts - equilibrium. For Piaget, learning occurs based on a learner's autonomous capacity for finding and solving problems on their own. "The development of operational behaviour is an autonomous process rather than a secondary consequence. When we speak of the autonomy of this development (...) the key to its explanation lies in the concept of equilibration in that it is a wider notion than any of these and comprehends them all" (LOURENÇO, 2012, p. 284).

Thinking and reasoning processes become increasingly more advanced as the learners develop through the interaction interacting with the world and others (PIAGET; INHELDER, 1958). For Piaget, a learner's intellectual operations become more organised in a coherent whole through thought exchanges and cooperation with others (see Piaget, 1947, p. 174). Relations between individuals are primary. "The primary fact, from this point of view, is neither the individual nor the set of individuals but the relationships among individuals, a relationship constantly modifying individual consciousnesses themselves" (PIAGET, p.136; *apud* CARPENDALE; LEWIS, 2004, p. 81).

Although Piaget acknowledged the social aspects of cognitive development, he foregrounded development as an individual process (LOURENÇO, 2012). This is reflected in his research methods which acknowledged children's curiosity, developing perspectives on the world and playful interactions. He examined ludic play, which has a resonance with fun. Play is an essential way of exploring the world. Although it might not necessarily lead to new understanding of the world; it can support learners to develop their schema.

Vygotsky's theory (1978) highlights the fundamental role of social interaction and an engagement in social activity in the development of cognition, as he believed strongly that collaboration between human individuals have a central role in the social production of knowledge. He also addressed affective considerations from social interaction related to "lived emotional experience" and from play as a way for learners to create imaginary situations that develops into the dominance of rules very closely tied to reality and real-life relationships (VYGOTSKY, 1978 p. 95).

Thought has its origins in the motivating sphere of consciousness, a sphere that includes our inclinations and needs, our interests and impulses, and our affect and emotions. The affective and volitional tendency stands behind thought. Only here do we find the answer to the final "why" in the analysis of thinking (VYGOTSKY, 1978, p. 282).

The notion of flow is also complementary with the Vygotsky's zone of proximal development – ZPD (1978). The interaction between students, teachers and more capable peers is important in supporting complex challenges, creating a helpful alignment of skills and learning challenges. ZPD indicates a way in which a complex challenge can become understandable through collaborative support. Vygotsky (1978, p. 89) explains that the *“essential feature of learning is that it creates the zone of proximal development.”*

The learners' understanding and actions supported by others allow them to function at a higher level than they might do independently. According to Vygotsky (1978; p. 89), internalising this socially created ability allows the learner to become autonomous:

[...] learning awakens a variety of internal developmental processes that are able to operate only when the "learner" is interacting with people in his environment and in cooperation with his peers. Once these processes are internalized, they become part of the child's independent developmental achievement.

A common factor between Piaget, Vygotsky and Freire is the relevance of students' autonomy in the process of learning. Vygotsky autonomy is supported by the more immediate interactional/interpersonal antecedents of seemingly independent functioning. For Piaget, autonomy is an important component of cognitive development (schema). Freire considers autonomy within its relationship to emancipation, albeit within a social-historical context. The notion of independent or autonomous conquest, supported by the pedagogy of autonomy, allows to interpret the concept of fun and emancipatory learning under the lens of Paulo Freire's

critical consciousness (2009). That is, the sense of fullness from the process of research (inquiry) based learning and findings occurs through the spiral integration of action and reflection for transformation (praxis). Freire (1996, p. 32), highlights that

There is no teaching without research and research without teaching. These “what-to-do” are found in each other's bodies. While teaching I keep looking for, searching. I teach because I search, because I asked, because I ask, and I ask myself. I research to verify. While I verify, I intervene and intervening I educate and educate myself. I research to find out what I still don't know and communicate or announce the novelty.

For Freire, students must enjoy learning and learning should involve joy. Because the joy of the "serious act" of learning does not refer to the easy joy of being inactive by doing nothing. Emancipatory fun is related to the hope and confidence that students can have fun by acting, reflecting and learning. They can search, research and solve problems, as well identify and overcome obstacles. Freire (2004, p. 142) emphasises that

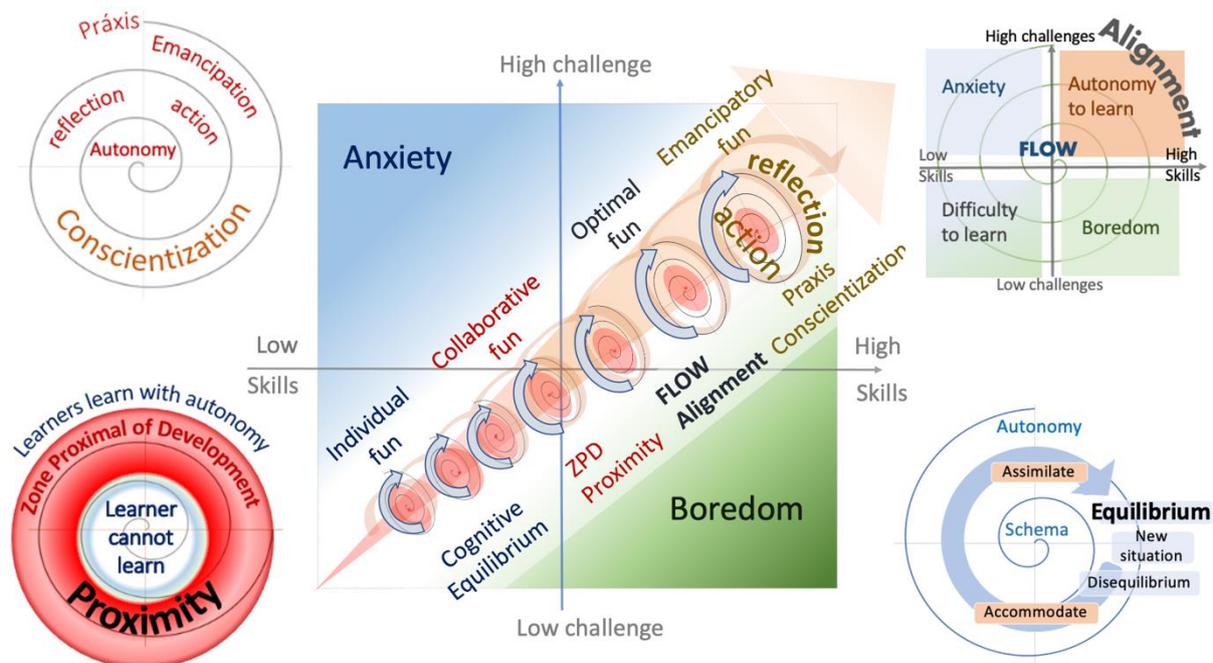
It is also false to take as irreconcilable the serious teaching and joy, as if joy were the enemy of rigor. On the contrary, the more methodically rigorous I become in my search and teaching, the happier I feel and hopeful too. Joy does not only come to discovery but is part of the search process. And teaching and learning cannot take place outside of search, outside of beauty and joy.

With Freire's lenses, fun refers to “changing sides” towards praxis. It is "emancipatory fun" which means "turning in different directions" with enthusiasm, joy, and consciousness essential for emancipated autonomy. In this way it can be suggested that Emancipatory fun is an emergent property of the learner's involvement in action and reflection with learning for praxis, for self-transformation towards emancipation. Fun is not separate from the learners' experience but is part “of” it.

Some authors have introduced the term “zone of proximal flow” articulating Csikszentmihalyi's “flow” with Vygotsky's “zone of proximal development” (SIRAJ-BLATCHFORD; LYNNETTE, 2016) to highlight the complementarity between the internalization process for independent - autonomous learning - in an ideal flow. Our study extends this conceptualisation with the polysemic meaning that fun has diverse dimensions on learning, presented in this study: individual fun, collaborative fun, optimal fun as well emancipatory (conscious enjoyment for changing - transformation).

Emancipatory fun is our response to our initial question about the relation between fun and learning, not as domesticating but as liberating for learners to become autonomous and

conscious. Figure 1 proposes different dimensions of fun associated with different theoretical principles for learning; in constructivism the individual fun as a process of the cognitive equilibrium; the collaborative fun in socio-constructivism; optimal fun can exist as part of the ZPD – Zone of Proximal Development and the emancipatory fun arises as a result of consciousness towards praxis. Within Flow, each learner has their own level of challenge, which is aligned to increasingly expand their skills and knowledge toward more complex challenges and skills to better interact, understand and shape the world. From a Freirean perspective that underpins the diversity and human uniqueness, if we are to explore this area of emancipatory fun, we need to begin by engaging with the students’ own beliefs, understanding their views and using this to inform how we develop our online teaching.



**Figure 1** - Emancipatory Fun for Optimal Learning integrating Freire’s conscientization, Vygotsky’s proximity, Csikszentmihalyi’s alignment and Piaget’s cognitive equilibrium  
Source: Okada, 2020

By doing this within an RRI framework we also hope this makes this project more of a shared endeavour, these posited relationships between theoretical models of learning and the empiric notion of fun suggest some specific questions, which are the focus of this study. What are the beliefs of online students about online learning and fun? What are the relationships between the theorized meanings about fun with students’ beliefs about online education and fun?

### 3 METHODOLOGICAL APPROACH

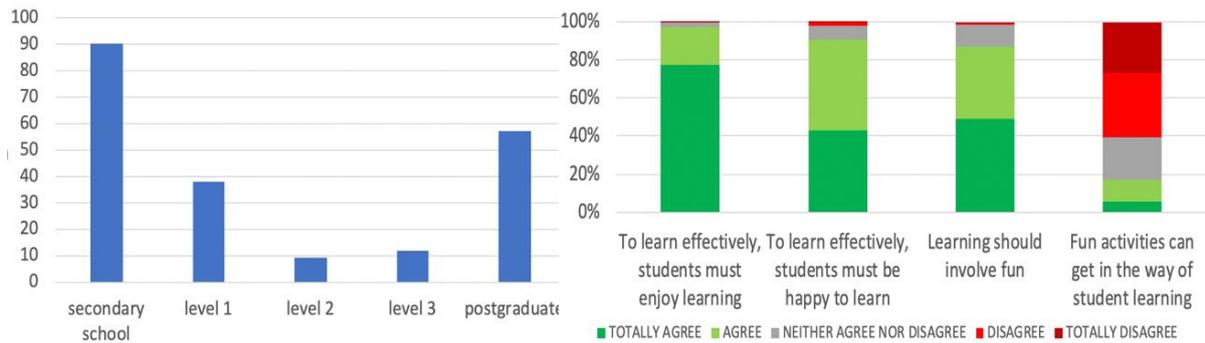
To examine students' views about fun and online learning, an anonymous mixed-method research study was developed with undergraduates from an introductory online course module offered by the Open University – OU in the United Kingdom. The Open University offers flexible part-time study, supported distance and open learning for undergraduate and postgraduate courses and qualifications for 174,898 students from the UK, Europe and some worldwide. Approximately 76% of directly registered students work full or part-time during their studies; 23% of OU UK undergraduates live in the 25% most deprived areas and 34% of new OU undergraduates are under 25, 14% with disabilities and 32% with lower qualification at entry. In this study, approximately 4,300 students were invited, of whom 630 volunteers were interested in the topic and joined this survey, 551 participants answered a questionnaire and 206 participants described their views on online learning and fun.

In this introductory course, there was a representative sample of beginners who came from secondary schools. As this course is offered to all undergraduates; therefore, there were also students from other levels of study as shown in Graph 1. The participants were from a nine-month course module, with 24 weekly units and four assessment activities. The data were generated in the last three weeks of February 2020, in the middle of this module. Two instruments were provided for volunteer students: (1) a structured self-reflective questionnaire (SHEEHY et al., 2019b) (Table 1) and (2) an open and optional question for students to present their individual points of view (What are your views about Fun and Online Learning?). This gave them the opportunity freely express themselves about the relationships or effects on fun and learning, according to their beliefs and lived experiences.

**Chart1 - Responsible Research and Innovation with open data (Okada, 2020)**

	<b>Recruitment</b>	<b>Implementation</b>	<b>Analysis</b>
<b>Diversity and inclusion</b>	Voluntary basis with no personal data	Completely anonymous	Diverse participants including workers
<b>Transparency and openness</b>	Objectives and process open to all	Open Online data	Open access in ORO repository
<b>Anticipation and reflexivity</b>	No implications for participants' studies	Reflexive instrument with open question	Peer-reviewers with distinctive roles
<b>Adaptation and responsiveness</b>	Responsive recruitment (email)	Optional withdrawal with a coded survey	Mixed methods, open database in ORDO

Source: ORO Open Repository Online, ORDO Open Repository of Data Online of the OU-UK



**Graph 1 - Students' previous studies**  
Source: Authors

**Graph 2 - Students' views about Fun and Learning**  
Source: Authors

The instruments for data generation were developed in Qualtrics - with a special code to allow the withdrawal of participation without the collection of personal data based on the RRI approach and approved by the Ethics Committee of the OU-UK (Chart 1).

#### 4 FINDINGS ABOUT FUN AND ONLINE LEARNING

Descriptive Analysis of the quantitative questionnaire data revealed largely positive views about fun and learning (Graph 2). Most students agreed that fun had value in supporting learning.: 98% agreed and 0% disagreed that “To learn effectively, students must enjoy learning”. 91% agreed and 1% disagreed that “To learn effectively, students must be happy to learn”. 87% agreed and 1% disagreed that “Learning should involve fun”. However, some students (17% agreed and 61% disagreed) considered that “Fun activities can get in the way of student learning”.

The study also assessed the validity of the adapted instrument developed by Sheehy et. al. (2019a) within the context of online education; which was used as a self-reflection artefact. The quantitative data was analysed using SPSS version 24 with a sample size of 206 and 21 statements. Three variables 13, 14, and 15 were not considered to be relevant for describing the sample. Cronbach's alpha 0.718 confirmed that the principal components analysis (PCA) were supported (COHENET. al., 2007). The instrument proved to be reliable for this study. (TAVAKOL; DENNICK, 2011).

Table 1 illustrates factor analysis with principal components and unrotated solution, which obtained three relevant groups: (1) Socio-constructivist learning with guided teaching and fun; (2) Banking model, transmissive learning and no fun and (3) Constructivist learning

and disturbing fun; 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 1 - Factor Analysis with Principal Components and Unrotated Solution**

<b>C1 - SOCIO-CONSTRUCTIVIST LEARNING with guided teaching and fun</b>	C1	C2	C3
19.Learning should involve fun	0.661		
09.To learn effectively, students must enjoy learning	0.623		
18.To learn effectively students must be happy	0.508		
03.Learning can be defined as the social production of knowledge	0.657		
02.Students learn best through collaborative activities	0.553		
04.Helping students to talk to one another productively is a good way of teaching	0.551		
01.Meaningful learning takes place when individuals are engaged in social activities	0.550		
08.The teacher's role is to facilitate students' own inquiry	0.452		
05.Effective/good teachers demonstrate the correct way to solve a problem	0.547		
<b>C2. BANKING MODEL, TRANSMISSIVE LEARNING and no fun</b>			
21.I am (NOT) enjoying studying online		-0.468	
06.Teaching should be built around problems with clear, correct answers		0.549	
07.The teacher's role is to teach facts		0.548	
17.I believe there should be a single teaching method applicable to all learning situations		0.408	
<b>C3. CONSTRUCTIVIST LEARNING and disturbing fun</b>			
20.Fun activities can get in the way of student learning			0.444
10.Students learn best by finding solutions to problems on their own			0.520
11.Students should be allowed to think of solutions to practical problems themselves before the teacher shows them how they are solved			0.435
12.Thinking and reasoning processes are more important than specific curriculum content			0.409
16.All students should be taught in classes according to their intelligence			0.433
Components not considered			
15.How much students get from their learning depends mostly on their effort			
14.Students who begin university with "average" ability do not remain "average" throughout their studies			
13.Students' educational potential is not fixed at birth			

Source: Authors

Deductive mapping occurred, supported by theoretical categories, to elicit a view of the nature of the beliefs within the three groups indicated in Table 1. Three indexes were generated from the PCA to get an average among its respective variables:

$$C1 = (V19 + V09 + V18 + V03 + V02 + V04 + V01 + V08 + V05) / 9;$$

$$C2 = (V21 + V06 + V07 + V17) / 4;$$

$$C3 = (V20 + V10 + V11 + V12 + V16) / 5.$$

NVivo (version 12) was used to carry out a thematic qualitative analysis with an interpretative approach supported by inductive mapping (Chart 2). This approach allowed themes to emerge from the students' testimonies. The results of the analysis from mixed methods are presented as follows. All analyses were checked by both authors.

**Chart 2 - Thematic Analysis of Fun in Online Learning: Values and Relationships themes**

<b><u>Negative Values</u></b>	<b><u>Negative Relationships</u></b>	<b><u>Positive Relationships</u></b>
Fun unnecessary	1. Fun in online learning is limited	11. Fun: has useful value for learning
Fun depends	2. Fun is hard when feeling isolated	12. Fun: elements must be incorporated
Fun difficult	3. Fun is not needed nor expected	13. Fun: must fit different learning styles
<b><u>Positive Values</u></b>	4. Fun is not possible when I struggle	14. Fun: requires face to face interaction
Fun useful	5. Fun is needed in a reading-based course	15. Fun: requires interactive learning
Fun important	6. Fun is ambiguous & subjective	16. Fun: must enable to connect with others
Fun enjoyable	7. Fun activities require different approaches	17. Fun: requires flexible time
Fun needed	8. Fun must not be forced	18. Fun: helps to enjoy the experience
	9. Fun must not affect Individual productivity	19. Fun: helps to feel good
	10. Fun must be sensible for productive time	20. Fun: supports Interest and motivation
		21. Fun: enables to engage, participate and learn
		22. Fun: enables to gather and recall Knowledge
		23. Fun: enables to enjoy, make effort and achieve
		24. Fun: enables to learn best
		25. Fun: enables to reduce stress and pressure
		26. Fun: enables to break the intensity of learning

Source: Authors

#### 4.1 Socio-constructivist learning with guided teaching & fun

Several components related to fun for emancipation emerged from this group highlighting a non-banking socio-cultural perspective, for example, greater involvement in the process, effective learning as part of students' own engagement and self-improvement. For example, participant 247 described a positive effect of fun on learning, as the ability to cope (reflect) and show (act) self-competence. Participant 495 reported fun as having the freedom to fit learning, work and life and enable better mindset (with self-transformation – emancipation). These are key elements for emancipatory fun which makes students to feel empowered to learn.

Participants below mentioned components of optimal fun: reducing stress (anxiety), promoting the balance – equilibrium – of the intensity of learning (challenges), keep up and catch up

learning outcomes (with skills aligned with challenges) and make them feel good (improve well-being).

A person's perspective when learning is quite important. To be able to **cope** and **show self-competence** will **make you feel good**. Fun, to have a non-serious outlook **helps** for some and at different times through their **learning experience** (Participant 247, Previous study: secondary, C1=4.09 (high) C2=3.6 C3=3.2, Value: Fun important; Relationship: Fun helps to feel good).

Its more about **having the freedom to fit it in around** my work, child and homelife so it **takes the stress out** of trying to **better myself** - so not being stressed and finding ways to **keep up** and **catch up** is definitely a **better mindset** to be in! (Participant 495, Previous study: no specified, C1=3.6 (medium) C2=3.2: C3=1.5; Value: FUN important; Relationship: FUN enables to reduce stress and pressure).

It (Fun) **helps** me **engage more** with the content so therefore **learning more** effectively (Participant 91, Previous study: secondary, C1=4.36(high) C2=2.4; C3=2.5; Value: FUN important; Relationship: Fun enables to engage, participate and learn).

As a FE Teacher I do build in **fun** and **enjoyable teaching practice**. I think there is still **potential to build** some form of fun teaching into distance learning although perhaps not to the same extent as perhaps a further education course. Those who chose to learn distance learning may still need some form of fun element to **break up the intensity of learning** (Participant 232, Previous study: Level 3, C1=4.36 (high), C2.6=, C3=2.75; Value: FUN useful; Relationship: FUN enables to break the intensity of learning).

In addition, participants also reported the relevance of autonomous learning, interaction, continuation of life, feeling supported by others, questioning, relevant ongoing activities related to real life (activating engagement and curiosity) drawing on others' experiences and taking advantage of opportunities for interaction. These components were highlighted as it follows.

I started off being really nervous and worried about the seclusion part, however, with the online tutorials, I have **developed a connection** to the University and those around me and now most definitely **feel a connection**. The fun part is the interaction and **meeting new people**, whether online or not. Distance learning gives me the **opportunity to carry on with life and enjoy my studies** at the same time. I think that would be called fun?!? (Participant 410, c no specified, C1=4.36 (high) C2=3.5 C3=2.5; Value: FUN enjoyable; Relationship: FUN must enable to connect with others).

Lots of relevant up to date/current activities, that can be **related to in real life**. **Meeting other students** doing the same course is **good**, and **feels supportive**, but not many **take up the opportunity**. (Participant 220, Previous study: Level 3; C1=3.18 (medium) C2=2.4; C3=1.5, Value: FUN needed; Relationship: FUN helps to feel good).

## 4.2 Constructivist learning & disturbing fun

Some participants perceived online education as positive opportunity to primarily learn on their own and were likely to believe that fun activities can hamper students' learning. Teaching approaches that tried to create educational social activities were seen by these students as "Forced fun". They consider that fun is unnecessary, and a distraction, a disruption, a waste of time and a factor that hinders learning by disturbing their study. They prefer to learn in isolation, without interference. These students described negative effects of fun as it follows.

Students do **not want fun** activities if they **do not add benefit** to their current learning, it would be deemed a **waste of study time** (Participant 525, Previous study: Secondary, C2=3.2(medium) C3=2.25; Value: FUN depends; Relationship: FUN must not affect Individual productivity).

Fun learning should be collaborative however this often **is not possible** due to study being independent and not set routine. (Participant 479, Previous study: Level 1, C2=3.4 (medium) C3=2.5; Value: FUN difficult, Relationship: FUN online is limited).

Gaining skills and knowledge in **isolation**. Developing yourself **without interference**. Working at your **own pace** with module materials and expanding beyond the materials when the motivation arises (Participant 129, Previous study: Secondary, C2=4.2(High) C3=3; Value: FUN useful; Relationship: FUN must not affect Individual productivity).

There were also a few students who valued the constructivist approach and disagreed that fun hampers learning highlighted that fun for them means being focused, must not affect their individual productivity nor be forced.

How fun can be applied in distance learning, **without forcing** students to interact with other peers. Fun activities could be viewed as **a waste of time** by certain students (Participant 545, Previous study: Level Secondary, C2=3.6 (High) C3=2.75 Value: FUN depends; Relationship: FUN must not be forced).

Fun is **not an option** studying **without the cost** of the course. Students should **be focussed** (Participant 198, Level 1, C2=3.8(High) C3=3.25; Value: FUN difficult; Relationship: FUN must not affect Individual productivity).

Trying to work my way through the module on my own, **without distractions** (Participant 278, Previous study: Secondary, C2=3 (medium) C3=2.75, Value: FUN difficult; Relationship: FUN must not affect individual productivity).

### 4.3 Banking model, transmissive teaching & no fun

There was a small group of students who perceived distance education as a traditional, transmissive model, essentially focused on receiving content. These students agreed that they do not need fun in their learning and do not consider fun to be part of distance online education.

**There isn't really much** I would define as “fun” with regard to the learning itself, but there are opportunities to connect with other students in a fun way (Participant 193, Previous study: Secondary, C3=4.5 (very high); Value: FUN difficult; Relationship: Fun: must enable to connect with others).

**There is no fun** in it at all but you don't have to have fun to learn (Participant 190, Previous study: Level1, 4; Value: FUN unnecessary; Relationship: Fun is not needed nor expected).

**Fun is not a state** of mind at the moment. I would consider adding "fun" or tortuous forced social activities (Participant 76, Previous study: Secondary, C3= 4(high); Value: FUN depends; Relationship: Fun must not be forced).

Learning from books and reading **is not stimulating** at all, and I **lose focus and attention** quickly (Participant 182. Other, C3= 3.25(medium); Value: FUN difficult; Relationship: Fun is needed in a reading-based online course).

One group of statements does not fit into the previous categories and reflected students who found the term fun to be ambiguous, changeable and subjective.

I think fun is a very **ambiguous** term, what can be fun for one person can be the idea of absolute boredom for another person. How do you decide what would be fun in distance learning? In what context? In the classroom? On a computer? **It is a difficult question** to answer (Participant 90, Previous study: Level1; Value: FUN depends; Relationship: Fun is ambiguous & subjective).

Distance learning has more to do with academic learning than university experience, and with such a wide range of students in terms of age, ethnicity, financial responsibilities, etc., "fun" would **mean many different things** (Participant 14, Previous study: Level1; Value: FUN difficult; Relationship: Fun is ambiguous & subjective).

I think "fun" is **subjective**. Some people find online activities fun, others find it fun to read about a topic that interests them. Some may find engaging with other students in a tutorial fun; for others, it can be the opposite of fun (Participant 82, Previous study: Level1; Value: FUN depends; Relationship: Fun is ambiguous & subjective).

## 5 DISCUSSION

This study presented an exploratory mixed methods study of online students' opinions about fun and learning. This context is highly relevant in a world in which distance online education has rapidly become a necessary practice in response to the global the pandemic.

A large majority of these higher education students value fun because they believe it has a positive social, cognitive and emotional effects on their online learning. This finding complements research in a traditional university, which highlighted that “*what students perceive to be a fun learning experience: stimulating pedagogy; lecturer engagement; a safe learning space; shared experience; and a low-stress environment*” (WHITTON; LANGAN; 2018, The result of this study also complements research about student-workers who valued fun to develop creativity and improve their performance in a fun working environment. (BALDRY; HALLIER, 2010; LAMM; MEEKS, 2009).

Fun is neither a simple nor a singular concept. Researchers seeking to explore fun in learning have repeatedly problematised its elusive nature and this is reflected here in students who emphasised that fun as an ambiguous, subjective and difficult to describe concept. If one imagines an “effect of fun on learning” continuum, then at one extreme is a small group of students in our sample who believe that fun hampers learning. This perspective is supported by some academics who see the use of fun and playful approaches as inappropriate and frivolous, which undermine the academic nature of higher education (SAHLGREN, 2009).

This study advances research and innovation in the field of learning and fun with three novel contributions. First, this study clarifies the variations in meaning both in the literature and in the perspectives presented by the participants of this empirical study. This study revealed that the distinct etymological meanings of fun from the past based on both Latin and Germanic have still influence on the meanings attributed by people and researchers nowadays. This study explains that as fun is still a polysemic concept; therefore, its value, relations and effects in terms of learning and educational research are controversial. Similarly, the approached and beliefs about how learning occurs are also debatable and contested in the field of Education. Thus, this study has reflected on the pedagogical theories that shape educational practices, for example, constructivism, socio-constructivist and critical pedagogy; as well including the traditional banking model, to frame an examination of the relationship between these theories

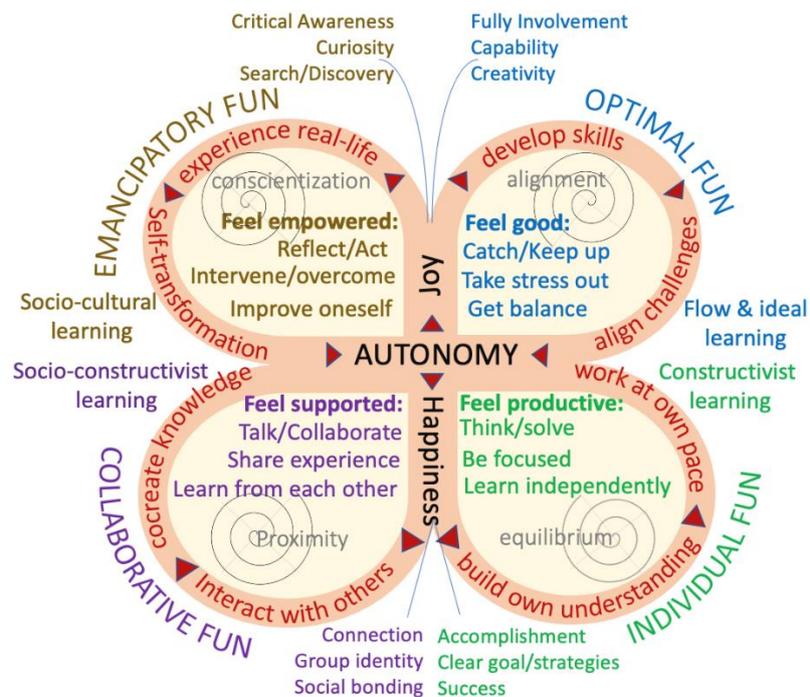
and fun-in-learning. This reflection made it possible to locate the value of “optimal fun” supported by the Csikszentmihalyi’s flow and the ideal learning experience, the “individual fun” achieved based on the Piaget’s Cognitive equilibrium and constructivist learning, the “collaborative fun” through Vygotsky’s zone of proximal development with socio-constructivist learning and the “emancipatory fun” via Freire’s critical consciousness for praxis with critical socio-cultural education as presented in the foundations of this study. This reflection suggested that the notion of fun has subtly different meanings in each perspective, and therefore that the value of fun in learning has differently nuanced positions within each perspective.

Statistical analysis indicated that beliefs in relation to the different conceptions of how learning occurs influence the value and effect attributed to fun and learning. The results of the qualitative analysis enabled seven themes to be identified to describe the value of fun in education. Four themes were based on the students' positive views: useful fun, important fun, enjoyable fun and necessary fun. Many of these themes were reflected the large section of the students who highlighted the socio-constructivist perspective. Three themes emerged derived from the negative views of students. These reflected both the constructivist learning perspective and the banking model with transmissive teaching: unnecessary fun, fun depends and difficult fun.

The second contribution of this study refers to the identification of the relationship between fun and learning that also emerged from the analysis of mixed methods. Statistical analysis indicated that a large majority 87% agreed that learning should include fun mainly because in order to learn students must be happy and should enjoy learning. However, there was a small group (17%) who highlighted that fun impairs learning. Qualitative analysis allowed a deeper exploration of these positive and negative relationships between fun and learning. Sixteen themes emerged to describe positive relations and five themes were illustrated with examples: Fun: must enable to connect with others, Fun: enables to engage participate and learn, Fun: enables to reduce stress and pressure, Fun: helps to feel good, Fun: enables to break the intensity of learning (See Chart 2). This set of themes might be useful for other studies and complement previous research. According to Bisson and Luckner (1996) fun can also be an intrinsic motivator for some students, allowing the suspension of social inhibitions and creating

a relaxed state of alert. Schmidhuber (2010) describes fun as the inner joy of discovering the creation of new patterns, where a pattern is interesting or surprising.

Finally, the third contribution of this study refers to the recommendations developed from the comments of participants and directed to three groups: curriculum designers, teaching staff and students. The recommendations for curriculum designers support: 1. rethinking pedagogy for online education from the perspective of singularity and diversity; 2. teacher involvement to better interact and learn about students' perspectives; 3. a safe learning environment respecting singularities and diversities; 4. Shared Experience; and 5. a balanced curriculum addressing the different perspectives and needs of students. 6. Creating fun learning spaces that support students' development for creative and engaging practices.



**Figure 2** - Four dimensions of Fun and Learning.  
Source: Okada, 2020

Evidence from empirical analysis interpreted through the lens of theorised meanings of fun are summarised in Figure 2. It illustrates the four dimensions of fun with their characteristic components and relationships, and related recommendations for teaching staff and students.

**Optimal fun** is the joy of being fully involved in learning, moving towards full capability and creativity. To promote optimal fun in learning, teaching staff can create opportunities for students to enjoy developing skills aligned with “just right” challenges.

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** is the happiness of fulfilling accomplishments, supported by clear goals and strategies. 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. Individual fun will help students feel productive with more autonomy to think and solve problems independently.

**Collaborative fun** is the happiness of making connections with others, creating social bonding and developing group identity. 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 cocreate knowledge. 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** is the joy of being curious, able to search and discover whilst being critically aware. To foster emancipatory fun through socio-cultural learning, teaching staff with students could together promote opportunities for self-transformation through real-life experience. Emancipatory fun will help learners to feel empowered; and increase their intrinsic motivation through an autonomy to reflect and act, intervene and overcome difficulties.

## 6 FINAL CONSIDERATIONS

Based on the RRI approach, this study highlighted the importance of understanding the value of fun in online education from the learners' point of view. This article presented an exploratory study through a reflective questionnaire and an open question that allowed them to freely express their feelings on this topic. This study examined a relevant context; distance education has become essential in the current global scenario and studies of fun in the context of online learning are very scarce. The differing conceptualisations developed in this research were supported by the mixed methods analysis of participants' views. This confirms the idea that different epistemological beliefs are associated with different conceptualisations of the relationship between fun and learning.

In practical terms – highlighted by Sheehy in a conversation with Okada, this means that learners', perhaps previously unvoiced, epistemological beliefs lead to different

expectations and appreciations of online learning activities and opportunities. The practical implications of this are - if we are to engage with learners' worldviews (as Freire would want) we need to acknowledge these differences in our online course designs and pedagogies and [in keeping with Freire again] build in opportunities for students to voice and reflect on their own beliefs and values; and those of others too. This study is therefore a starting point for such an endeavour.

Further studies based on the RRI approach are important to construct new questions and explore the issues described below.

**(1) Teachers:** How might teachers promote students' critical awareness of their epistemological beliefs and dimensions of fun in ways that enhance their online learning? What pedagogical activities and methodologies can foster optimal fun, individual fun, collaborative fun and emancipatory fun? What are the teachers' views about online learning and fun, and how might they relate to enhancing professional development programmes?

**(2) Course Teams:** How might course teams create engaging environments and activities that promote natural fun (but where students do not feel "forced")? How can course teams make reading content fun for students? How could course teams personalize online learning with fun to support diverse groups of students, for example, those with a high workload or with special educational needs and disabilities?

**(3) Students:** Can research into fun and learning inform distance educational provision that might help students cope with the potential isolation of online learning? Which strategies could help students enjoy reading while participating in an online course? What are the recommendations for improving provision for students who find online learning limited?

Further studies based on the RRI approach are needed on the effects of fun on online learning, also considering gender, age, socio-cultural aspects, digital inclusion, accessibility and geographical differences. It is also important to consider a broader institutional, national and international local perspective on the relationships between individual, collaborative, optimal and emancipatory fun with innovative models for online learning to promote autonomy and a vision more humanistic of education in the world.

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