Gamification in Open and Distance Learning: A Systematic Review

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Agenda

- Some Numbers
- Aim of the Research
- Method
- Findings
- Discussion

Some numbers..

- Do you know that only 2.3% of the people registering a course at Coursera completed it?

- 226652 people registered for this Duke University course, Think Again: How to Reason and Argue, ran at Coursera and only 5322 (2.3%) of them completed it (Jordan, 2017).

- Meyer (2012) also stated that the dropout rates of MOOCs offered by prestigious universities such as Stanford, MIT and UC Berkley were 80-95%. For example, only 7% of the 50.000 students completed who took the Coursera-UC-Berkeley course in Software Engineering.

- There is a similarity in the report of dropout rate in Coursera's Social Network Analysis class where only 2% of participants earned a basic certificate and 0.17% earned the higher level programming with distinction certificate .

MOOC	Year	Number of Students Enrolled	Number of Students Completed	Rate of Completion	Platform
Sewage Water Treatment	2015	10725	470	4.4	EdX
Exploring Anatomy: The Human Abdomen	2014	8581	831	9.7	Futurelearn
Functional Programming	2014	38029	1968	5.2	EdX
Responsible Innovation	2014	10824	396	3.7	EdX
ICT in Primary Education: Transforming children's learning across the curriculum	2014	9000	315	3.5	Coursera
The Human Element: An Essential Online Course Component	2013	697	30	4.3	Canvas.net
Astronomy - State of the Art	2013	4400	660	15	Udemy

Why do students drop out?

- There might be different reasons for that problem including lack of learner-learner, learner-instructor, learner-learning material interactions, lack of enough learning materials, technical problems students face to in the system, not receiving immediate feedback, and lack of motivation. Due to these reasons, dropouts happen in the big scale open and distance systems.

- Lee and Choi (2011) are investigated online course dropout researches and found that "student factors were the most frequently mentioned variables in the reviewed studies, occupying 55% of the total number of identified dropout factors while the second one was factors related to course design and implementation as well as institutional supports as Course/Program factors, which occupied 20%."

Gamification?

- Gamification defined as the use of game design elements in non-game contexts, or is the integration of game elements, mechanics, and frameworks into non-game situations and scenarios (Horizon Report, 2013).

- For instance, players can earn badges, discounts, and other rewards for visiting real-world shops and "checking-in" to the mobile phone application FourSquare. Another example of the most frequently use of gamification in business is loyalty programs such as Starbucks Card and Turkish Airlines Miles and Smiles programs.

Aim of the Research

Starting from this, this paper intends to reveal the answer of the questions of (1) which game elements and combinations have been mostly used in the field of open and distance learning, (2) what the distributions of the studies according to the publication type and year are, (3) what the level of studies according to the target audiences (elementary, secondary, higher, and lifelong) are, and (4) what the common findings say.

Method

This study is designed as a systematic literature review which consist of 5 steps according to Petersen, Feldt, Mujtaba, and Mattsson (2008). Those steps are:

- description of research questions,
- searching for relevant published research,
- screening of those research,
- coding of them
- analyzing and mapping the data.

Findings

Publication year of the study: After screening process, it can be seen that there is a distribution of the years studies published in the gamification researches in open and distance learning.

Publication Year	2013	2014	2015	2016
Number of the Studies Published	3	5	15	13

Research Method: After screening process, it can be seen that there is a distribution of the research methods in the gamification researches in open and distance learning.

Research Method	Number of the Studies Published
Experimental	15
Case Study	10
Survey	2
Action Research	1
Correlational	1
Network Analysis	1
Mix Method	2
Theoretical Studies	4

Participants' Features: After screening process, it can be seen that there is a distribution of the participants' features both in course level studies (elementary, secondary, higher, and lifelong) and in group sizes in the gamification researches in open and distance learning.

The Level of the Study	Number of the Studies Published
Elementary	3
Secondary	2
Higher Education	15
Graduate Education	1
Lifelong Learners (Open to anyone such as MOOCs)	4
Experts	1

Game elements: After screening process, it can be seen that there is a distribution of game elements in the gamification researches in open and distance learning.

Game Elements	Frequency
Rewards	6
Badges	14
Leaderboard	11
Narrative	1
Points	10
Virtual Goods	1
Status	2
Challenge	3
Achievements	6
Trophies	1
Avatar	4
Levels	10
Time Banking	1
Progress Bar	2
Feedback	2
Quest	2
Dashboard	1

Discussion

- Based on the findings, it can be said that badges have been most frequently used game elements in the gamification researches in open and distance learning. Leaderboard (11), point (10), level (10) follow it. Reward and achievement are also important and mostly used game elements in the gamification researches in open and distance learning. The right combination of game elements is very important for a successful implementation in open and distance learning.

- As it is seen, there is not any secret recipe for using game elements in a big scale open and distance learning system. However, the key for the success is the correct selection of game elements.

- To sum up, we believe that gamification has also a positive effect in the big scale open and distance learning systems and there is a need for more research to build up a guide for those who want to integrate game elements into their systems.