The Relationship between the Factors affecting using Gamification and Gamification Implementation in Higher Education: The Case of the Egyptian Non-governmental Higher Education Universities

(بحث مقبول للنشر كجزء من متطلبات الحصول على درجة الماجستير في إدارة الأعمال من الأكاديمية العربية للعلوم والتكنولوجيا والنقل البحري)

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Abstract:

Gamification has been an emerging terminology in the last few decades. With the emergence of innovative technologies, creative learning, and action-oriented mindset; new learning techniques have been born to cope with the fast-paced world which is hovering around the 21st century generations. The gamification concept in Egypt has seen a noticeable development and awareness in the higher-education field; specifically inside institutions that prefer development and have good financial resources and strong management. The current paper is tackling some of the major factors and variables that might positively or negatively impact the implementation of gamification and video games inside the classrooms of non-governmental higher-education institutions. After the improvements of the technological infrastructure like internet connection and the government support to open more higher-education private universities at the New Capital; the road is smooth as ever for the universities' decision-makers to initiate ambitious projects. The independent variables suggested in the paper are age, involvement and understanding, finances, legalities and regulations, and classroom time; while the independent variable was "gamification implementation in higher-education institutions in Egypt". The main data collection method used are in-depth interviews;. The interviews were analysed using narrative analysis to deeply dive into the content narrated by the interviewees and uncover the hidden meanings and the distinctive stories and plot elements presented. At the end, a conclusion and an action plan are included to give the universities a glimpse in the actual implementation of gamification.

Keywords: Gamification, Video Games, Higher Education, Gamification Implementation, Universities Innovation, elearning, Gamification and Education

1.0 Introduction

1.1 Research Introduction and Background

The relationship between gaming experiences, mind and mental development has been observed since old ages. Multiple strategic games have been created and evolved in gigantic civilizations like chess and dominos; both originated in BC China (Red Bull Staff, 2018). Today, scientists and businessmen try to deeply dive into the strings of the mental aspects in order to use it in the best possible ways. For instance, some applications like Lumosity claim that their gamified experiences positively affect brain development and evolution. (Hardy & Scanlon, 2009)

Moreover, according to the National Institutes of Health (2022); about 2 thousands of children who play video games for three or more hours per day have displayed a noticeable cognitive performance boost in comparison to their peers who do not play (like in working memory).

New HE non-governmental institutions have been continuously planned and opening since launching the New Capital in the context of Egypt's 2030 Vision (Egypt Today staff, 2017). The Minister of Higher Education and Scientific Research Khaled Abdel-Ghaffar announced a set of six completely new universities to be opened soon; four of them are completely operating in 2021 alone. Despite the multiple educational compounds and hubs opening in cooperation with elite global institutions; an important creativity and leadership factor might be missing; thus called gamification.

The new shift towards a digitalized and globalised world is pushing both governments and decision makers towards a completely new educational direction that is more technology dependent and encourages more learning techniques (Mckinsey and Company, 2016). One of the most modern techniques is gamification.

Moreover; many HE educational institutions in the globe are continuously adopting new softwares and methods to adapt with the post-coronavirus world. According to Hana Yoshomoto when interviewed by (Kadi, S. 2021) on Al Fanar Media, the MENA region faced the most negative impacts of the coronavirus outbreak because of the instant shift towards remote learning; because of the lack of teaching expertise and digital infrastructure.

The main hypothesis of the paper tries to assess two main parties (Deans/Owners and Professors/ Instructors) abilities and capabilities to apply video games generally and gamification systems specifically in their respective educational institutions in a strategic business plan; with respect to the modern trends and other interconnected environmental factors. The researcher of the current paper tries their best in order to evaluate the

presenting issues of the Higher Education system in order to pave the way for video games to make an appearance in some way or form in the educational system.

1.2 Research Statement and Importance (Significance)

The research scope mainly aims to evaluate the business implementation viability of the usage of video games in the non-governmental higher education institutions in Egypt; by tackling the variables which are age, Involvement and understanding, finances, legalities and regulations, The purpose is trying to pave the way for higher non-governmental higher education education decision makers to believe and gradually adopt gamification and video games in the mainstream learning process.

1.3 Research Problem Definition

According to Times Higher Education in 2023, the most highest ranked non-governmental higher education institution in Egypt is the AUC (American University in Cairo) achieving an "Teaching Rank" between 801 to 1000; followed by AAST (Arab Academy for Science, Technology, and Maritime Transport) which achieved the rank of 1201+ in 2021; leaving the other competing institutions unranked. Although both ranks look relatively good in comparison to other unranked institutions, they drastically fall in teaching experience rank to the multiple global peers like Harvard University and CalTec (California Institute of Technology).

As discussed in depth in the rest of the paper, the COVID-19 Pandemic has pushed many international universities to use digital applications and video games to facilitate the conveying flow of information from the educator to the student (multiple examples displayed in the paper).

Based on the previously mentioned information and the information presented in the Literature Review, there is a clear connection between the educational institution's global success and their innovative methods of teaching; like those using video games.

Moreover, there are multiple environmental factors that might hinder the execution of innovative teaching techniques in various multiple institutions; for example but not limited to, classroom time, finances, and age.

According to the previous information, the researcher tries to assess the overall viability of using and implementing innovative digital tools like video games or gamified applications in the HE non-governmental institutions in Egypt and give them recommendations to help in raising their in teaching rankings specifically, and overall

rankings generally, while providing recommended, tailored, and strategically and environmentally-based business decisions to realise a proposed business strategy to be executed.

2 Literature Review

2.1 Gamification, other Video Games-related Terms

A game can be defined as "a System (interconnected within the "space" of the game) in which players (People interacting with game content or with other players) engage in an abstract (abstraction of reality) challenge (to achieve goals and outcomes), defined by rules (define the sequence of the game), interactivity (interaction), and feedback (typically direct and clear), that results in a quantifiable (score-based) often eliciting an emotional reaction (positive or negative". (Kapp, et al., 2013)

Defining gamification as a term, The Gartner Group defines as "The broad trend of employing game mechanics to non-game environments such as, innovation, marketing, training, employee performance, health and social change". However, the definition adopted by the book author "The Gamification of Learning and Instruction" is that "Gamification is using game-based mechanics (like levels), aesthetics (engaging elements like graphics), and game thinking (thinking about daily experiences in order to transform them to a game) to engage (ensuring attention and involvement) people (learners or players), motivate action (giving direction and purpose), promote learning (based on educational psychology), and solve problems (because of the game cooperative and competitive nature). (Kapp, 2012)

2.2 Delving into the actual and successful implementation of Video Games and Gamification in Education

Another study worth mentioning was conducted by an Egyptian researcher of California Polytechnic State University. The researcher built a statistical comparative study based on three main assessment criteria (motivational, cognitive, and social processing; during conducted lean games). Worth mentioning that the paper was purely did not mention the business application. (Deif., 2017).

Some might argue that the paper is limited to only being a systematic review of previously published research but the work done by the authors to cover up all and classify LO into four main groups (being cognitive, behavioral, social, and skill-based) is undeniably respected and specific.

In the book called "Computers & Education"; Mathew Barr tried to confirm that video games could play a critical game role in higher education students' social and interactive skills; as well as other "graduate attributes". The researcher tried to use well-known gaming IPs (like Minecraft, Lara Croft, and Warcraft); in randomised experiences, in order to evaluate the major impacts of playing video games in the student's mind. The writer concluded that even "commercial games" are having multiple advantages on developing graduate attributes blaming the general negative notions over video gaming. (Barr., 2017)

The work done by the author is astonishingly stupendous as a great topic is being tackled. Most entrepreneurs and implementers try to systematically tailor their video game development strategies by a previously detected rigid aim; which may unintentionally decrease the gaming fun factor and negatively affect the broad gaming culture and its indirect side-benefits.

In the same previously stated book, van Roy suggested that gradual and systematic adaptation of gamification is undeniably having great positives in understanding the "person-specific" motivational triggers and impacts. (van Roy 2018)

A paper published in (The International Journal of Management Education, 2021) by an Estonian researcher discussed the usage of an online game called "**Kahoot**!" in **entrepreneurship learners**. The findings was (after testing three main entrepreneurship effects; honeymoon, performance, and grading) that offering incentives to the top-tier player would motivate them to participate and involve more in group activities. (Kauppinen & Choudhary, 2021)

In Malaysia, the same game "**Kahoot**!" is used by researchers in the light of the initiative (named as Higher Education Order Thinking "HOTS") presented by the Ministry of Education in Malaysia. From a total population of 65 students (while evaluating their attitude, motivation and perception) at (KV SHAS) **Vocational College**; and after analyzing data on SPSS, using Kahoot! a program in vocational college was accepted as a learning aid. According to the researchers positive attitude towards classes and subjects helps in creating creative and smart personalities, extrinsic motivation ensures the continuous involvement of the learners while igniting the positive competitive traits, while changing perception towards challenging subjects facilitates the students' learning experience. (Ismail, M. et al., 2018)

After searching more about Kahoot!; the software combines basic gamified activities like multiple choices, "true or false" questions, and others. The application helps educators to upload multiple media types to support the features. Although the Nordic software is a good aid and a small step forward towards using gamification and video

games in systematic education, it lacks the creative and artistic aspects; as well as the adaptive AI. (Quizizz.com)

It is worth mentioning that another application called "**Quizizz**" is also used as an assessment tool by researchers in Indonesia; in the (**Project Management Course**). After using the mentioned application in midterms, It was clear that the application is better than traditional paper assessment techniques and Google forms (Handoko, et al., 2021)

Same as Kahoot!; Quizizz uses basic gamified activities, that is why the application was easily adopted in the stated course. But unfortunately, the application did not bring innovative gamified experience to the table. When comparing the two mentioned applications to a game like Ubisoft's Assassin's Creed (which is based on historical events and civilizations) for example, the engagement and entertainment factor is much more engaging in an "entertainment market released video game" in comparison to a game based on mainly flashcards. Moreover, they both are not on par with the investment put in some brain training applications like Lumosity.

Based on a conference paper published in the book "Intelligent and Interactive Computing". The authors used a model called **Technology Acceptance Model** "Abbreviated as TAM" aiming to assess the effectiveness of using Gamification in the higher education field; while the paper also encountered the hesitation between professors to actually believe in the gamification effectiveness and its ability to capture students' engagement. (Ab Rahman, R., 2019)

The paper draws interesting simple technical comparisons of the two discussed softwares (Kahoot! and Quizizz). The highlights that might catch the reader's eye are that the latter tends to encourage the student's deep analytical skills, while the first likes to enhance the solver's fast and snappy reactions. In the end, both softwares are particularly similar.

At the 6th e-Learning Conference in Belgrade; three Serbian researchers discussed the same topic. The authors analyzed the advantages of game-based learning in problem solving skills, knowledge acquisition, and engagement. (Scepanovic, S. & Žarić, N. 2015)

In Webster University in Vienna; an article tried to elaborate the effectiveness of (GBL) in **tertiary education**. The researcher tried to determine the best rate, frequency, and usage of "non-digital" gaming simulations in soft skills communication sessions. The survey guided the writer to believe that modern gamification is just "rebranding" of techniques used in traditional education (especially when it is not digital). (Wiggins. 2016)

Moreover, a study conducted aimed to review all researchers regarding the **bipolar effects of gamification elements in education**. The study found that rewards, leveling, and narrative gaming elements are among the most well-known. The paper also emphasized the importance of gamification in developing and fixing learners' behaviors and encouraging engagement. (Durin, et al., 2019)

Many universities and academic libraries have begun to employ a variety of **game-based technologies**. AASTMT for instance; quadruple researchers discussed the impact of applying gamification tools in **e-learning scenarios**. More than half of the students who were involved in the research acquired information better than using the traditional means. (Elabnoudy. et al., 2017)

2.3 Connecting Gamification and its implementation; to the Environmental Factors and Trends

Trying to connect gamification as a science more to **Egyptian culture**, a case study conducted by Mina Ghaly. The author tried to link the need for innovation in Egypt's Vision 2030 and the country's sustainable development supported by the UNGA Sustainable Development Goals. Ghaly highlighted the lack of **motivation and innovation** due to the country's **social circumstances and needs**. The study aimed to use gamification and serious gaming techniques to enhance social innovation, cooperation, and collaboration in order to improve social and economic projects (Ghaly., 2021).

Moving to the most interesting yet gloomy topic in 2021, the **coronavirus pandemic**. The most related global insights (based on the conducted Global Survey) provided by McKinsey & Company are:

- **Entrepreneurs and strategic leaders** confirmed technology as an inevitable critical corporate strategy tool
- An extraordinary push towards **digitalization** are formed around organisational and industry levels
- The trend of **technology-dependence** is predicted to exist on long-term

The results concluded by the research agency were very predictable as employees had to work from home much more than before the crisis; that is why business owners had to dig deeper for exceptionally innovative ways to get the job done in the most seamless and efficient way possible. Secondly, as people tend to stick to the newly adopted habits, it would be hard to shift back to the conventional ways; especially if some digital products become internationally accredited due to modern political directions like "The Financial Inclusion".

Another instance is a famous Microsoft game called Minecraft. The game is claimed to improve creativity and collaboration skills between players; Thus pushed multiple schools

in the US to include it inside their **core or supplementary curriculum**. The American giant has made the game available for free while releasing a complementary application, for both teachers and educators during the Coronavirus. (Favis., 2020)

The last example to be mentioned is "Dreams"; a Playstation game developed by the English studio Media Molecules. The game has endless possibilities by offering very simple tools used by artists, teachers, and musicians to produce beneficial content. (Favis., 2020)

The research presented by the Egyptian researcher (El Gamal & Abd El Aziz, 2012) has discussed the relationship between the number of students within a higher education classroom; and how the raise of the given number has paved the way to adopt innovative technologies and e-learning techniques. By interviewing senior academics professors and surveying students, the researchers managed to assess the perception and the level of acceptance of both parties to accept the newly presented guidelines.

One example of a research paper that discusses the understanding of gamification among university professors and students is "Gamification in Education: A Systematic Mapping Study of the Middle East and North Africa" by (Al-Azawei, et al., 2018).

This study is a systematic mapping review of the literature on the use of gamification in education in the Middle East and North Africa (MENA) region, and includes an analysis of the understanding of gamification among university professors and students.

The study found that while there is growing interest in the use of gamification in education in the MENA region, there is still a lack of understanding and awareness among university professors and students about gamification and its potential benefits for learning. Many professors and students are also skeptical about the effectiveness of gamification and its ability to improve learning outcomes. (Al-Azawei, et al. 2018)

Discussing the internal culture and acceptance of students towards gamification; a study conducted by (El-khateeb & El-sayed. 2017) aimed to explore the use of gamification in Egyptian higher education and to investigate the impact of gamification on student learning outcomes. The researchers conducted a survey of students from a public university in Egypt, which included questions on their attitudes toward gamification and their perceptions of how gamification impacted their learning outcomes.

The results of the study showed that students had generally positive attitudes toward gamification and perceived that it had a positive impact on their learning outcomes. The researchers also found that students who were more engaged with gamification were more likely to report positive learning outcomes.

A paper by (Murillo-Zamorano, et al,. 2021) discussed the interconnected relationship between students' satisfaction, the academic system, and the digital society. The researchers generated empirical results which emphasises that including gamified experiences are noticeably escalating students' creativity; without dropping any of the academic achievement values. The research emphasised the inevitable need for "co-creative" experiences and active-learning techniques to connect students to the current age while specifically developing certain practical skills to do so .

A paper made by (Stadon., 2020) has discussed how the mature classroom behaves towards technology and the new trends. The researcher used a diagnostic tool called TAQ " Technology Attitudes Software" to evaluate the extent of technology usage for personal and academic usage. Stadon concluded that older students tend to use technology more efficiently and effectively than their younger peers; thus because of their more experience in using technologies, making them more loyal to the tech logins they prefer to use. Both age groups were equally confident and adaptive to the new technological trends and skills.

A paper that discusses the Egyptian government's policies towards implementing innovative learning techniques in Egyptian universities is "E-learning strategies in higher education in Egypt: A case study" by Eman Elkhawas and colleagues (Elkhawas, et al., 2016).

The study found that the Egyptian government has made significant efforts to promote e-learning in higher education, including the establishment of several e-learning centres and initiatives, as well as the development of a national e-learning strategy. However, the authors also identified several challenges to the adoption of e-learning in Egyptian universities, including limited access to technology and the need for more training and support for educators.

The authors suggest that Egyptian universities need to develop more comprehensive e-learning policies and strategies that address the specific needs and challenges of their institutions, as well as provide the necessary resources and support to facilitate the adoption of e-learning and other innovative learning techniques. They also recommend that universities engage in ongoing dialogue with the government and other stakeholders to understand their needs and concerns related to e-learning and to promote a culture of collaboration and experimentation.

More towards the governmental readiness to effectively include digital softwares in Higher Education. The Finance Minister has allocated EGP 3.8 billion for the academic season 2020-2021 to be exclusively spent for technological and private universities to cooperate with the " Digital Egypt" plan.

The article published by "Ahram Online" emphasized the state's preparation and awareness towards the inevitable global digital direction. That awareness would exponentially facilitate any legal procedures required for adapting new technologies and open the gate for more financial corporations and opportunities for private universities.

Moving to the financial factor, a research article made by (Barata, et al., 2014) aimed to investigate the impact of gamification on university students' willingness to pay for course-related services. The researchers designed an experiment in which students were asked to complete a task related to a course using either a gamified or non-gamified interface. After completing the task, students were asked to indicate how much they would be willing to pay for the service.

The results of the study showed that students who used the gamified interface were significantly more willing to pay for the service than those who used the non-gamified interface. The researchers also found that the effect of gamification on willingness to pay was stronger for students who were more engaged with the course material.

In the above literature review, the authors tried to systematically tackle all the connected spots to gamification as much as possible. After introducing the gamification definition and the similar related theories, specific global and Egyptian case studies and researches were tackled and analysed and simplified. It was obvious to the reader that the pandemic has fastened the wheel towards a more digitalized world with more dependence on technological advancements. Although the main target for the author is to build business research, the scientific, cultural, psychological sides could not be neglected. In all the previously mentioned examples, the authors did not provide a clean, simple, practical and flexible business model for private higher education institutions, especially in Egypt. Lastly, on the basis of the reviewed resources, it is undeniable that multiple factors could directly or indirectly leave a positive or negative impact on the realisation of a full gamification business model; those elements included demographic like age and finances, psychographics like personal experiences and beliefs; others related to capabilities like technological literacy, and related to the business culture such as bureaucracy and active time availability. Lastly, the research is trying to evaluate the abilities and capabilities of business organisations parties to actually use video games or gamified platforms systematically in their usual academic studies.

3.0 Research Methodology

3.1 Theoretical Framework

		Gamification Implementation (GI) by non-governmental universities owners/ decision-makers and professors/ instructors (Dependent Variable)		
AGE (AG)	INVOLVEMENT AND UNDERSTANDING (IU)	FINANCIES (F)	LEGALITIES AND REGULATIONS (LR)	CLASSROOM TIME (CT)

Figure 1.2 Research Conceptual Model

Hypothesis

The Rationale for Developing the Hypothesis

The hypothesis is based on the rationale that there are multiple challenges that hinders a successful implementation of gamification in Egypt. Like the age of the professors, awareness of gamification, financial capacities of the universities, legalities and regulations, and the time capacity inside the classroom. The variables chosen are based on the research included in the **Interview Questions Table** (Figure 1.3) below.

H1: Implementing video games in HE is affected by University Owners/Managers' (**P1**) and Professors/Instructors' (**P2**) Abilities Capabilities, and Capacities (AKA Environmental Factors).

Ex: Financial and Time Resources to be Invested (Finances), Legalities and Regulations; and the other **environmental factors.**

H1a: An positive and inverse relationship between age and Gamification implementation

H1b: A positive and direct relationship between finances and Gamification implementation

H1c: A neutral relationship between Legalities and Regulations and Gamification implementation

H1d: A negative and direct relationship between Time and Classroom and Gamification implementation

H1e: A positive and direct relationship between the Involvement and understanding of gamification; and Gamification implementation

The **Factors (Variables)** discussed are:

Age (AG) - One of the main demographic factors; refers to the age group of the respondents.

Finance (F) - evaluating the capabilities of the decision-makers to financially invest in a gamification softwares as a part of the curriculum

Legalities and Regulations (LR) - discusses the capabilities of the owners/decision to implement video games in the HE institution curriculum in light of their organisation regulations and the country regulations.

Classroom Time (CT) - Measuring if the classroom overall time would absorb a new teaching element like gamified softwares or not

Involvement and Understanding of gamification "Adaptability to change and innovation" (IU) - Measuring the level of awareness of the decision-makers, professors, and students towards the gamification concept; and their experiences and acceptance regarding gamification.

Research Limitations

1. The research is limited to only three Egyptian non-governmental higher education institutions (study population sample was limited, time limitations)
2. The access towards owners and deans is very limited to one (or two), The variety of leadership styles that differs from dean to another provided a challenge so the data was defined as an outlier due to the inability to find patterns..

3.2 Sampling Design

The interviews, selective approach were selected to approach distinct kinds of non-governmental institutions and see their similarities and differences.

The sample of the interviewees were chosen from the listed universities:

- Canadian International College
- Arab Academy for Sciences, Technology, and Maritime Transport
- Arab Open University
- British University in Egypt

The Interview participants were;

- Dr. Ahmed Soliman; a current professor at AASTMT and former professor at CIC
- Dr. Omar Mamdouh, a current professor at AOU and former Teaching Assistant at CIC
- Dr. Rehab, a Professor at CIC
- Dr. Helen El-Quqa, a current professor at Cairo University, and a former professor at CIC, Badr University, and AASTMT
- Dr. Amany Abdelhaleem, A current professor at CIC
- Dr. Khaled Saif, Head of Logistics Department at AASTMT
- Dr. Hany Labib, Professor at AASTMT
- Dr. Wafaa, Head of Interactive Learning at BUE
- Saif Tarek, Teacher Assistant at EUE, and former Teaching Assistant at CIC
- Shahd Khaled, Teacher Assistant at Egyptian Chinese University and former student at BUE
- Dr. Bassant, a Professor at BUE
- Dr. Farah, a Teaching Assistant st BUE
- Dr. Amr Abdelhameed, a Teaching Assistant at BUE

3.3 Research Steps

Phase One

After getting the complete approval of the interested professors in non-governmental higher education institutions in Egypt; the researcher was able to reach out to the professors to make direct interviews.

Phase Two

The interview questions were semi-structured and answered by multiple professors who accepted to participate in the institutions selected. The professors' reactions and responses during the gamification experiment were also observed and evaluated.

The Interview Questions Table: (Figure 1.3)

Independent Variables	Interview Questions	Hypothesis	References
Age (AG)	1. Does the age of the professors affect their understanding and implementation of gamification. (AG) 2. Are older professors more resilient towards gamification than younger ones?	**H1A**	Müller, C. and Mildenberger, T., 2021. *Facilitating flexible learning by replacing classroom time with an online learning environment: A systematic review of blended learning in higher education.*
Financial Resources (FR)	3. Do you think students would pay more for a gamified experience, 4. Is your organisation ready to invest in gamified software?	**H1B**	Dicheva., 2016. *Exploring the relationship between university financials and Gamification in Enhancing Creative Learning Tools Investment* Barata, A., Gama, R., Jorge, J., & Gonçalves, D. (2014). *The Impact of Gamification on University Students' Willingness to Pay for Course-Related Services.*

			Computers & Education, 75, 197-207.
Legalities and Regulations (LBR)	5. Do the academic regulators in Egypt give the capacity to implement a gamified education softwares in the studies? 6. Do you have the right to adopt innovative gamification techniques in your courses?	**H1C**	*Egypt allocates EGP 122 bln for higher education, EGP 60 bln for scientific research: Finance minister.* 2020, August 22. (Al Ahram Online) El-khateeb, S., & El-Sayed, A. (2017). *Gamification in Egyptian higher education: An exploratory study. International Journal of Emerging Technologies in Learning (iJET), 12(7), 4-16.* Abou Zeid, Seif., 2017. *A blended learning education policy in Egypt: The road for better access and social inclusion.* American University in Cairo.
Classroom Time (CT)	7. Do you have enough time to adopt gamification inside the classroom?	**H1D**	Müller, C. and Mildenberger, T., 2021. *Facilitating flexible learning by replacing classroom time with an online learning environment: A systematic review of blended learning in higher education.*

Parties Involvement and Understanding (PI)	8. What do you know about gamification and transformative learning? 9. Do you believe that the owners, decision makers, and students would be interested in applying a new gamification model? 10. Do you think that the internal and ext culture would accept a gamified education? 11. Have you used gamification in one of your courses?	**H1E**	Zamorano-Murillo, L., Sànchez, J., Godoy Caballero, A. and Muñoz, C., 2021. *Gamification and active learning in higher education: is it possible to match digital society, academia and students' interests?* Abou Zeid, Seif., 2017. *A blended learning education policy in Egypt: The road for better access and social inclusion.* American University in Cairo. Al-Azawei, A., Alghamdi, R., Al-Saggaf, Y., & Alandoli, E. (2018). Gamification in education: A systematic mapping study of the Middle East and North Africa. Journal of Educational Technology & Society, 21(3), 222-238.

Phase Three

The information deducted from interviews and the were collected, transcribed, and categorised based on the environmental factors stated in the literature review. The technique used to analyse both data collection methods is qualitative analysis.

The main qualitative analysis technique which is used by the researcher was narrative analysis with content analysis elements.

Phase Five

After analysing the data gathered, the findings of the research were formulated to determine the connections, relationships, and trends between the variables.

4. Research Findings and Data Analysis

The following approach is used to analyse the responses of the respondents in the context of the interview circumstances and conditions while trying to analyse the hidden messages involved in all replies, the repetitions of some keywords, taking in consideration the personality of the interviewees, their storytelling, and personal experiences.

Remedies Included to Eliminate Bias

The researcher let all the participants state all their ideas freely regarding the topic at the beginning of the interview; then asked them the same questions in the same order. To analyse the data provided similar responses were collected to try to find similarities for a correct scientific analysis. The narrative analysis used was reinforced with content analysis and discord analysis elements in order to be as objective as possible. Moreover, the researcher tried to transfer the same words, sentences, and reactions as stated in the recording without any kind of manipulation; as much as possible given the language differences between the respondents.

Involvement and Understanding

In the involvement questions, the researcher aimed to uncover the understanding and the awareness of the academics of the idea of gamification. Surprisingly enough, most of them were aware of the concept and some of its implementations. But, most of them also were not familiar with the terminology itself; whether it is "transformative learning" or "gamification".

Dr. Rehab and Dr. Amany for instance connected gamification to school and believed that it is mainly implemented there. Building on Dr. Rehab's understanding, Dr. Amany and Dr. Hany mentioned the cruciality of gradual adaptation from a young age; or at least from the first days of university. The latter idea was supported by Dr. Khaled Saif, who insisted that First Grade students would accept the idea because they have less pressure than Grade 2 or Grade 3 students for example. Dr. Helen also supported the gradual adaptation approach; but because of her marketing background, she highlighted that a decision-maker should provide a step-by-step approach to raise the awareness of both students and professors.

Also, Dr. Ahmed Soliman added that gamification can use senses like "visual sense" when he mentioned the distinctive impact of each colour and how he used them inside his classroom.

Dr. Saif clarified that gamification aims to reach the unconsciousness of the student while clearing the stress layer. Dr. Saif also added that gamification was used historically to improve soft-skills.

Moving to the impact of the acceptance of the academic community, most of the interviewees believed that culture should be divided into internal culture (inside the organization) and external culture (outside the organization).

Regarding the owners and decision-makers, six out of the nine respondents believed that if gamification learning is profitable, they will instantly adopt it. Words and statements like "ROI" ,"money before quality" , "budget" , "money before service", "money -driven", and "profit" were very apparent in the "disappointed" replies of the interviewees.

The other respondents were more optimistic though, all of them believed that the personality and mentality of the decision-maker is the key factor for the change. Dr. Amany and Dr. Hany both provided the same concept of leadership in different words. Dr. Amany said the acceptance is based on whether the decision-maker is innovator or conservative, while Dr. Hany used the words "progressive or conventional". Dr. Shahd supported this theory by saying that some owners like to be initiatives.

Dr. Khaled, Dr. Helen, and Dr. Omar all believed the personality of both students and professor is critical for them to mutually accept gamification in the educational methods and break the fear barrier.

According to Dr. Saif and Dr. Shahd, they believed that gamification would be accepted by youth students as it gives them a sense of competition and achievement.

Classroom Time

Moving to the replies regarding "classroom time", All the respondents (except for Dr. Hany) confirmed that the time would not be enough to apply a fully-fledged gamified experience in a classroom for various but similar reasons. Dr. Ahmed Soliman, Dr. Shahd, Dr. Saif, and Dr. Rehab mentioned that a gamified experience begins outside the classroom during the preparation phase; not only during the lecture; in which the time is very limited.

Dr. Khaled said that gamification would be easier to implement in tutorial or section; the theory which Dr. Shahd contradicted as a Teacher Assistant saying that in her last place,

she was also responsible for administrative tasks alongside teaching. So, preparing a gamified material was impossible for her.

Regarding material preparation, Dr. Ahmed Soliman supported Dr. Shahd's point of view. The professor said that it is not the lecturer's responsibility to prepare the curriculum; but the faculty should provide him with the material needed. He gave an example that one of the organisations he worked at refused to pay a premium subscription for gamified Pearson McGraw subscription.

Dr. Amany also highlighted that the curriculum is always more than the credit hours provided for a course. She also mentioned that using technology is a hassle for professors and might waste a lot of time.

Finances

Regarding the financial challenges that might face both decision-makers and students; four of the respondents stated that a gamification add-on or service should not be presented as a standalone service with premium fees. They clarified that gamification should be included inside a package or full offering (like semester and administrative fees) to be accepted by the student or parents.

From an institutional point of view; Dr. Helen said that the university she works at would love to invest on a gamification program if it proved beneficial. Dr. Hany supported this opinion by giving an example of how smart boards became a reality in every elite highschool before it was not accepted. Dr. Khaled also supported this opinion but connected the approval to the program profitability for his organization.

Dr. Saif and Dr. Omar said that the students themselves would love to pay for a gamified learning experience but their parents are those who hold the financial power. Dr. Omar and Dr. Amany highlighted the world economic conditions which puts burdains on the parents and hinders organisations to invest and research. Both of them also agreed that new highly-sophisticated universities like those in the New Capital would easily hunt this opportunity.

Regarding the owners and decision-makers, six out of the nine respondents believed that if gamification learning is profitable, they will instantly adopt it. Words and statements like "ROI" ,"money before quality" , "budget" , "money before service", "money -driven", and "profit" were very apparent in the "disappointed" replies of the interviewees.

Age

Moving to the age factor, five interviewees stated that the personality and culture of the instructor is more important than the lifespan of the academic. For instance, Dr. Omar says that the level of education is more important than age; mentioning that even some youth professors might not be familiar with new educational changes. Shahd supported Omar's valid point by mentioning that the professors who learnt abroad are much more open to change. Dr. Ahmed Soliman who is about 50 says he is relatively old but loves to use and initiate new technologies and is highly adaptable. But Dr. Saif emphasised that character is the true factor to professors' acceptance regardless of where they were educated; saying that many old professors are risk-takers and initiators.

Legalities and Regulations

Moving to the legal capacity of decision-makers and professors to implement gamification inside their institutions. Most of the respondents (except for Dr. Khaled) believed that they have partial freedom to do so. Dr. Khaled said that he has the full capacity to use any type of education being a Head of Department.

There were mixed responses regarding the capacity in whether academic regulators in Egypt would accept gamification as an official way of learning in Egypt. Dr. Rehab and Dr. Shahd believed that the regulators put only guidelines and will not intervene with the way of learning. Dr. Shahd also mentioned that the government encourages new ways of learning like using tablets in the schools. Supporting this vision, Dr. Saif said the government supports gaming and new communication technologies so would not likely interfere. Dr. Amany accepts that a university has freedom but the internal management might be the real challenge.

British University in Egypt (BUE) Case and Interviews

According to the people involved in the interview, British University in Cairo is the number one higher-education institution in Egypt. According to Dr. Wafaa (Head of Interactive Education at the British University in Egypt) Dr. Amr Abdelhamid (Teacher Assistant in Finance), it is the number one in ranking in the country. Thus due to the innovation and being the first university to apply gamification in Egypt. Dr. Bassant (A Professor in Management) said that BUE direction always focuses on innovation while adopting concepts like "blended learning" and "student-centred learning" .

Dr Wafaa understood that the correct gamified experience should be used on technological devices with enough power. Moreover, she believed that gamification is not about only using high-end technology but about building and designing a fully comprehensive game which is full of game elements like storytelling, competition, and collaboration. She said that the video game is a reflection (sama expression said by Dr. Bassant) of the experiences conveyed to the students; not an alternative method to the conventional experiences. That is why she strictly recommended gamification for qualitative courses not for quantitative ones.

Regarding Dr. Bassant (Professor in Entrepreneurship and Management), she completely understood gamification and said that she was implementing a game in her management course using the ebook interactive system that offers multiple simulation games. That offers multiple alternatives to each student (who is a business owner in game) and each player chooses the best suitable pass to grind his own business; and the software offers the player's feedback, recommendations and corrective actions. She added that this simulation was graded for about 10 to 15 percent of the coursework; she had limited authority to include it in midterm or final.

Dr. Amr was also fully aware and engaged in the technique. He told the interviewer that he already uses programs like Kahoot and techniques like flip-learning (meaning asking students to do research on concepts before being explained) to ensure the interactivity of his students. He also said that they use those mentioned softwares along with the ones supported by McGraw Hill and Pearson. Dr. Amr believed that gamification is the future and could be completely replacing traditional learning ways.

Back to Dr. Wafaa; the instructor hinted that almost all universities in Egypt; regardless of their size, investment, or trustworthiness, are not technologically prepared for the real gamification experience. When asked about that, she said that only two labs in the Business Administration faculty are not enough to test all students regularly with the focus they need. Dr. Amr disagreed with this opinion, he said that it is a matter of skill of the professor to do time management and added that most of the learning is nowadays done out of the class. Dr. Bassant sees that the limited time and capacity during classes prevents the implementation during lecture, that is why she was implementing it out of lecture; which affected students attendance rate.

Dr. Wafaa also insists that gamification is the future and should be implemented in consistent steps with a long-term strategy. She mentioned that when she presented the idea to the university board 9 years ago, she faced some resistance; but the support of the dean then bringed the idea to light.

Dr. Amr supported this proposal by saying that sooner or later that would be the reality. He said that AI is replacing professors right now; and mentioned that Harvard made a robot professor.

Dr. Wafaa elaborated that; unfortunately, the implementation of gamification in her university took a huge downgrade as the implementation shrinked and only applied in the Business Administration faculty with more limitations due to financial issues and difficulties which pushed many professors to leave the university which lead to losing quality and providing competitors with valuable assets.

Dr. Bassant said that BUE invests with no issues in gamification as long as the system has enough quality. She mentioned that a system like Kahoot would be refused because of some weaknesses.

Dr. Amr did not agree, he said that the support has not changed at all and saw that the economic situation and the COVID-19 pushed for more innovative investment and creativity.

Dr. Wafaa said that all involved parties like decision-makers, professors, and students were resistant to some different degrees. The decision- maker needed a strong proposal supported by great presentation to accept gamification. Most of the professors were resistant; even one of them left the room while she was providing a session for gamification. Moreover, she said that the older the professors get, the more they become resilient; but not always though; giving the example of the previously mentioned professor.

Regarding the students, Dr. Wafaa believed that most of them were resistant and not motivated or inspired to the change; but gradually they began to accept it and became more engaged. She also saw that only a small number of the students would see the addition and entertainment in the game itself. That is because it must be connected to grading and responsibility. She also mentioned that the culture differs from the public to private universities, stating that public universities, especially in the governorates, are more responsible and motivated to learn. She hinted that Aswan university students accepted the gamification model compared to Cairo university students.

Dr. Bassant agreed that most of the students would not be engaged unless the gamification experience is graded; she said that only about 100 out of 300 students engaged in a game because it was optional to play. That is why she decided to include a gamified question based on the game in the midterm exam.

Dr. Wafaa believes that any strategic decision like the gamification implementation should be forced upon both professors and students in order to be accepted and effective. To do so, she sees that the administration should provide the instructors with up-to-date

gamified materials like the ones provided by Pearson and McGraw Hill (used at BUE); if so, the professor would have enough classroom time to use the experiences with the students without the hassle of the preparation. She finally stated that any strategic or tactical change regarding gamification is not affected by the Ministry of Higher Education in Egypt; elaborating that it has minor interference when compared to the Ministry of Education.

5. Conclusion

Based on the total interviews, it seems that implementing gamification in the chosen institutions would be inescapable for any institution that aims to keep competing in the fierce market of private institutions. The case of BUE is paving the way for other competing universities to initiate their own gamification model. Although some factors might still to some extent hinder the implementation of gamification like the age of the professors, decision-makers mindset, and classroom time. The overall picture became more bright after reaching out to BUE Instructors. Some of the researcher assumptions were validated, others refuted, and other factors are partly agreed upon. It was not expected for the researcher that more than half of the instructors understand gamification, even though it was superficial understanding for most of them.

Regarding the classroom time, the interviewees took the factor from multiple directions; like preparation of materials, actual lecture time, hassle of students, and lack of good internet connection and technologies which wastes a lot of time.

The age factor was an actual threat to gamification implementation, but not to the extent predicted by the author. Many professors mentioned how the personality of instructors affect their acceptance and how COVID-19 affected the adaptability.

Also, the type of decision-makers and students have been repetitively stated to be crucial factors for their acceptance, engagement, and involvement of gamification.

The amount of freedom to implement gamification was surprising for the author; most professors had complete freedom to teach in their own way and even partially involved games in grading. Moreover, the Ministry of Higher Education does not involve itself in each university strategy.

Even the financial aspect impact on students was completely outcasted by the interviewees. For institutions, there was almost a consensus that the institution's decision-makers are money-driven and short-sighted which prevent them from seeing the investment opportunities.

6. Results Discussion

- H1a: Based on the interviews conducted, most of the professors and decision-makers confirmed the inverse relationship between the age of the professors and their ability to implement gamification. Some also stated that personality and character is another factor to be considered.
- H1b: Unsurprisingly, the respondents clarified that their organisations would be open for creative gamified experiences if they proved beneficial enough and within a healthy economic environment; like at BUE for instance.
- H1c: The results proved that any given private organisation has the freedom to adopt any kind of learning system without any serious interference from the government but the organisation's hierarchies and management system are different between the universities.
- H1d: There was a consensus between most of the respondents that the classroom time is not enough for professors to implement gamification due to factors like facilities, extra tasks, material preparation, and administrative work.
- H1e: The awareness and involvement of the professionals were as expected. All of them were aware about the concept but most of them were unaware of its implications. Only BUE professors were fully aware of the implications because of their implementation experience.

7. Recommendations

1. Prepare the young generation from their first academic positions to use innovative technologies and exploit their partial awareness of gaming culture. Thus by performing training sessions regularly and giving them the freedom to innovate new learning technologies inside the classroom.
2. Help relatively old professors with simple technologies and games that might fit to their mentalities; while giving them sessions from professionals or their younger peers to improve their understanding of the gamification concept and its execution.
3. Academic decision-makers like owners and deans should push for investment in gamification technologies whether investing in software or hardware; while providing a gamified curriculum that fits with the culture to support busy professors and connect positively with students.
4. Teacher Assistants should be excluded from administrative works and their creative energy should be exploited in developing more creative educational techniques.
5. Institutions should give the ultimate freedom (as much as possible) to teach and evaluate students in a gamified way as long as the professor sticks with the learning objectives.

6. Based on point 5, the professor would prepare his material as he wishes; which saves much time, effort, and increases all parties' satisfaction.
7. One of the huge leaders in private Higher Education institutions should lead the way to provide a detailed proposal to the Ministry of Higher Education in Egypt in order to accredit gamification as an official educational tool that is used in fair evaluation in exams.
8. The Ministry of Higher Education in Egypt, should decide a gradual plan to ensure the universities adaptation to the new learning technique.

8. Suggestions for future researches

- A comparative study could be done in the future to compare the after more gamification applications (like recommended in action plan) are actualized
- A comparative study between the application in Egypt and in other developed country like Germany or developing one like Malaysia would stretch the research scope
- The Inclusion of students as; not limiting researches to decision-makers and instructors would emphasise the research
- The inclusion of public universities would be a great addition to researchers
- More accessibility to deans and owners inside the institutions would be a plus
- Applying field case studies and experiments inside the classrooms and analyse both professors' and students' reactions

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