Gamification as an Effective Learning Tool to Increase Learner Motivation and Engagement

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ABSTRACT

In this paper, we reflect on the implementation of a gamified application for helping employee learn important facts about their training program for level up capability. Gamification of education is a developing approach for increasing learners' motivation and engagement by incorporating game design elements in educational environments. With the growing popularity of gamification and yet mixed success of its application in educational contexts, the current review is aiming to shed a more realistic light on the research in this field by focusing on empirical evidence rather than on potentialities, beliefs or preferences. Gamification can be used on all the types of education. Be it student or to the employee training. There are no boundaries how the gamification in education can be made. Gamification the educational process can be a real challenge because in the making of the process one must have a balance between the fun in the game session but also got the knowledge from the study that is intended. The game cannot be more addicted than educating the student that use the feature. But the game cannot to be boring either and make the student and employee more reluctant to study.There is a direct link between increased motivation and higher levels of engagement when the gamification intervention is introduced. This is a application review on gamification motivation and engagement learner.

Key words : Gamification, learning, education, motivation, engagement

1.INTRODUCTION

1.1. Gamification

Gamification is the application of game-design elements and game principles in non-game contexts. It can also be defined as a set of activities and processes to solve problems by using or applying the characteristics of game elements. Gamification commonly employs game design elements to improve user engagement, organizational productivity, employee recruitment and evaluation, ease of use, usefulness of systems, physical exercise, traffic violations, voter apathy, and more. A collection of research on gamification shows that a majority of studies on gamification find it has positive effects on individuals. However, individual and contextual differences exist. [1]

There seems to be a consensus that gamification is the use of game mechanics in non-game contexts. In the instructional context, gamification is seen as a means to make learning more engaging by the use of features normally found in games to support learning materials.

This definition is quite simplistic and also important in order to understand what gamification actually is, as well as distinguish game content from game mechanics. While the content of a video game includes the story, the characters, and the environment, game mechanics are the elements added to the content to provide a structure (levels) and reward accomplishments (points, badges, lives).

Therefore, if we apply this definition to the instructional context, the learning content which includes presentations, simulations, branching scenarios, and exercises would be the equivalent of the game content. Therefore, gamification would only apply to the non-instructional material –the container– to create interest and engagement towards the learning content. Basically, the intent of gamification of instructional materials is to make them more appealing through the addition of game mechanics such as scoring, unlocking new modules, badge collections, and others.

1.2. Gamification Work with Extrinsic and Intrinsic Motivation

Since gamification implies the addition of game elements (such as points, levels, badges, and others) as incentives to use in a learning system, the key aspect of gamification is rewards aimed at providing extrinsic motivation to the user.

Wikipedia defines extrinsic motivation as the performance of an activity in order to attain a desired outcome; it comes from influences outside of the individual. Common extrinsic motivations are rewards (for example money or grades) for showing the desired behaviour, and the threat of punishment following miss behaviour. Competition is an extrinsic motivator because it encourages the performer to win and to beat others, not simply to enjoy the intrinsic rewards of the activity. A cheering crowd and the desire to win a trophy are also extrinsic incentives.

What combinations of game elements are studied According to gamification is the use of game design elements in non-game contexts. In turn, game design elements which are used in the creation of gamification scenarios can be divided into three categories: dynamics, mechanics and components Dynamics represents the highest conceptual level in a gamified system. It includes constraints, emotions, narrative, progression and relationships. Mechanics are a set of rules that dictate the outcome of interactions within the system, while dynamics are users' responses to collections of those mechanics. The game mechanics refer to the elements that move the action forward. [2]

They include challenges, chance, competition, cooperation, feedback, resource acquisition, rewards. Components are at the basic level of the gamification process and encompass the specific instances of mechanics and dynamics.

They include achievements, avatars, badges, collections, content unlocking, gifting, leader boards, levels, points, virtual goods, etc. For instance, points (components) provide rewards (mechanics) and create a sense of progression (dynamics). However, we note that the gamification terminology is still unsettled and various variations of the introduced above terms exist.

Most of the educational gamification studies and applications are driven by the presumption that gamification in education consists chiefly of incorporating a suitable combination of game elements within learning activities. The takeaway message is that the gamified system designers should not be so concerned with rankings and online comparisons to encourage users to compete against each other, but with their use as a personal reference, creating challenging environments and guidance for users to achieve their mastery interests.

By opposition to extrinsic motivation, intrinsic motivation is the self-desire to seek out new things and new challenges, to analyse one's capacity, to observe, and to gain knowledge. It is driven by an interest and/or enjoyment in the task itself and exists within the individual rather than relying on external pressures or a desire for reward. Students who are intrinsically motivated are more likely to engage in the task willingly, as well as work to improve their skills which will increase their capabilities. Students are likely to be intrinsically motivated if they attribute their educational results to factors under their own control, believe they have the skills to be effective agents in reaching their desired goals, and are interested in mastering a topic, not just in achieving good grades.

In summary, gamification is the introduction of an extrinsic reward system (based on game mechanics) to non-game content (such as learning content) in order to engage and motivate learners to participate and complete the activity. Its use is intended to compensate the lack of intrinsic motivation towards a learning activity.

1.3. Gamification and Motivation: Is Gamification Effective?

Gamification vendors showcase the value of gamification, especially as a motivation tool to foster user engagement. However, research over the last few decades tends to demonstrate that, although such results may be observed, they cannot be generalized.

Research shows that gamified systems return different results with different type of users. Regular users of gamified systems are mainly intrinsically motivated to use these systems. In general, most of them are not concerned about the rewards that a gamified system can provide; they use it to network with others, to learn about a subject matter, just for fun, etc.

Gamification is based on principles of extrinsic motivation where students will indeed work harder for the reward, but ultimately gamification will detract from students' intrinsic motivation to learn. Performance incentives offered to learners can adversely impact their perception of the task, or of their own abilities: Offering a reward to complete a task signals to the learners that the task in itself is undesirable. Otherwise, why would they need a reward?

Gamified systems that provide learners with feelings of autonomy, competence and relatedness are likely to foster autonomous motivation, learners may then start ascribing their motivation to the added external regulations, which reduces or even removes any initial intrinsic drive.

Overtime, after having benefited from the reward for a while, the learners will likely lose their intrinsic motivation and won't do the task without a reward. Additionally, the satisfaction from the extrinsic reward will dissipates, requiring an increase in value of the reward. Rewards are then only weak reinforces in the short term and become negative reinforces over time. Rewards may even encourage unwanted behaviour. For example, targeting a speed badge may negatively impact carefulness. [3]

How can gamification Design Be Improved? we argue that gamification can motivate learners in a qualitative good way when it supports the three basic psychological needs innate to everyone and the first theories is Need for Autonomy because when feeling autonomous, the learner perceives no demanding external constraints or pressure. In educational contexts, teachers and parents who provide children with choices and support them in their initiatives are found to positively stimulate the autonomous motivation to engage in learning behaviour, more than teachers and parents who are strict and controlling. The second theories are Need for Competence the perception of competence leads to autonomous motivation. In educational contexts, learners who experience competence are found to be more persistent and have better study results than learners who feel incompetent. The third theory is need for relatedness because in an educational context, learners who work together, sharing experiences and a common goal, have stronger bonds, resulting in relatedness need satisfaction and autonomous motivation.

2.GAMIFICATION TRENDS

Gamification is not a new technique but recently, the buzzword has gained overwhelming prominence. With engagement and retention rates dwindling, and consumer attention span taking a downhill trend, gamification is posing as a timely antidote to these cases. However, today, replicating game mechanics in business scenarios is a hard nut to crack, especially with the budding gamification trends.

In this post, we'll share the top gamification trends that are shaping the market space from its significance in corporate learning to the best gamification software available today. Understanding these trends will help you better leverage the psychological drive behind games. This way, it will be easy to motivate employees, drive user-engagement, increase sales, or solve a business problem using gamification. compilation of gamification statistics, to gain an in-depth understanding of this industry.
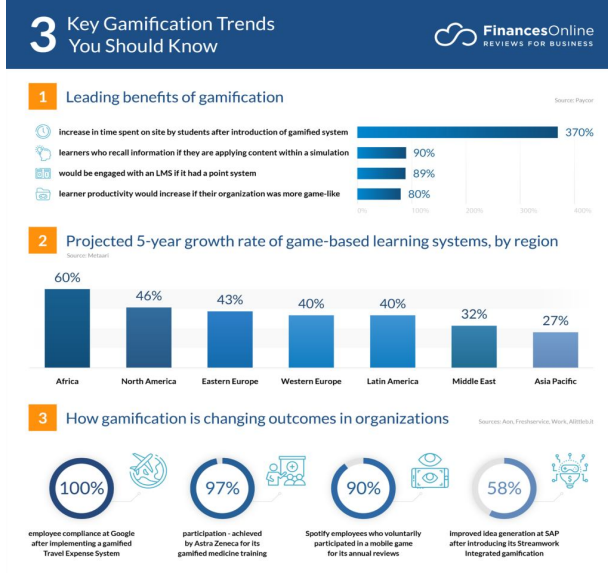

Figure 1: Gamification trends

Forward-thinking companies leveraging gamification are profiting from the traits that make game-based applications so alluring. The benefits of gamification to consumer and employee engagement are so apparent, there's no doubt about that.

However, in recent times, we've seen companies prioritize the implementation of gamification in corporate learning. The use of gamification training features is bearing fruit. For example, according to eLearning Learning, gamification enhances employee productivity by up 50% and employee engagement by 60%.

Figure 2: Benefit of gamification in training 2019 source: eLearning Learning

Unlike in consumer engagement, the use of gamification to boost employee engagement has faced less critical conundrums. This is because unlike customers who erect walls to filter gamified campaigns, employees have developed a positive perception about gamification. To illustrate, 97% of employees above 45 years old believe

gamification would help improve work. Besides, 85% of employees are willing to spend more time on gamified software. [4]

3.INDONESIAN GAMIFICATION TECHNOLOGIES

We choose 2 application for gamification famous is Indonesia market that is Ruangguru and Ruangkerja because both applications have 15+ billion users, 2000+ customized corporate videos, increase 10 times completion rate, rating apps 4.8/5.0 and 94.8% engagement rate users social learning.
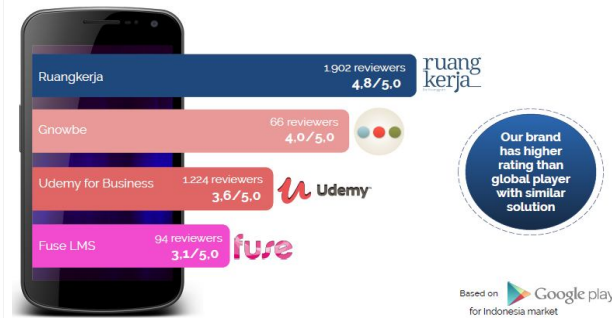

Figure 3: Ruangkerja rating apps compare with others

3.1. Ruangguru

PT Ruang Raya Indonesia (Ruangguru) is a limited liability company engaged in the field of non-formal education which was established according to and based on applicable law in Indonesia and has obtained a License to Establish a Non-Formal Education Unit and Operational Permit for Training Course Institutions. Ruangguru is the largest technology company in Indonesia that focuses on education-based services. Ruangguru have more than 15 million users and manage 300,000 teachers offering services in more than 100 subject areas. Ruangguru develops various technology-based learning services, including virtual classroom services, online exam platforms, subscription learning videos, private tutoring markets, and other educational content that can be accessed through the web and Ruangguru applications.
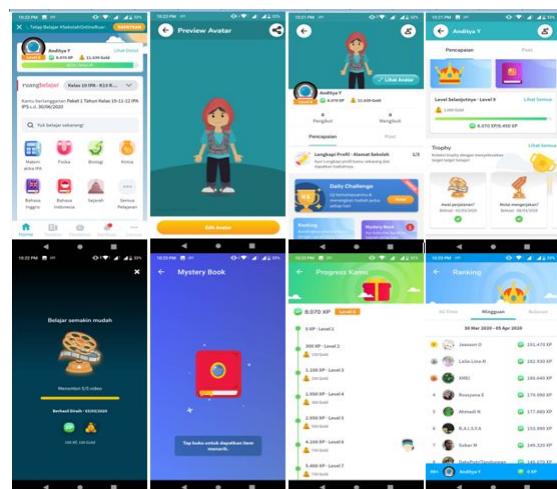

Figure 4: Ruangguru Gamification System (Ruangguru Adventure)

Ruangguru has a mission to provide and expand access to quality education through technology for all students, anytime and anywhere. Ruangguru Adventure is a gamification of the learning process in the Ruangguru application. Through this feature, users can play while learning, and have the opportunity to get a number of points that can be exchanged with digital products in the application. This gamification is proven to increase the engagement of users of the application is quite high. By playing the game the user is actually also learning. The learning process becomes fun. [5]

3.2.Ruangkerja

Ruangkerja is an effective and efficient corporate learning implementation solution company, Ruangkerja conduct training needs analysis in company, design interesting and easy-to-understand learning content, and provide assistance during implementation to ensure training success and get measurable results. [6]

Ruangkerja have features

1. Mobile learning
2. Learning journey
3. Powerful user interface
4. Collaboration
5. Leaderboard
6. Notification
7. Certificate

Figure 5: Ruangkerja Features Display

Trainees are encouraged to complete the training with the highest score. Competition in learning is needed to encourage trainees to complete the best possible material and become the best in a class by getting the highest test scores and being ranked top.

Figure 6: Ruangkerja designed and optimized for corporate learning needs [7]

4.IMPLEMENTATION

Between full gamification of the classroom and 20% quota suggestion, gamification is a tool to aid in achieving learning objectives and not vice versa. Employing game features, or any kind of educational technology, is not the goal at the expense of students' learning.

Outlined four principles necessary in any gamified design with learning content. First, she recommended that the learning objectives be well-stated and explicitly presented prior to engaging gamification elements, and preferably embedded within the gamified design. Second, she highlighted considering practical steps when applying gamification design in the learning environment, such as the use of reliable gamification software that allows for full deployment of gamification features. Few companies produced that kind of software such as 3DGamelab, Gradecraft, and Classcraft. Third, game designers and educators. According to Kolb (2015), need to prepare quests to increase motivation and engagement. Fourth, the gamified design should allow for modding (shortened from modification). Modding, in a gamified context, means to allow users to make their own game choices. Students should be empowered to choose their own avatars, create quests, and decide to engage the gamified content individually or by working in teams. Research has shown that intrinsically motivated students experience gradual disengagement and loss of motivation when forced to use game features. [8].

5.COMPARISON WITH EACH PLATFORM

Even though both platforms are formed by the same company, there are still many differences between Ruangguru and Ruangkerja which is shown in this table 1.

Table 1: Ruangguru and Ruangkerja comparison

	Ruangguru	Ruangkerja
Target User	Any student from primary to high school	-Employees -HR Division
User Interface	Fun Oriented, The User interface is used the fairytale theme to give a "Study is fun" vibe.	Professional oriented, with the dark blue theme makes the vibe more executive and more focused, the buttons and text are more bolted and more office looking.
Study Method	- Assignment - Videos - Text oriented material - Live chat with the teacher or lecturer	
Functionality	For student to like studying and make their grades better.	-For employees to learn new skills and improve their way of working. -For HR Division to see their employee progress of honing their skills
Gamification in Apps	The gamification in apps is so obvious. With the theme "Ruangguru Adventure", student can study, work on assignment, and get a reward currency that they can use to buy accessories for their character.	The gamification in apps is not to obvious. With the theme "Learning Journey", Employee can study, work on assignment, and climb on the leaderboard as they progress, the achievement on the end of the study is certificate from Ruangkerja.

In this comparison table, can be concluded that Ruangguru used more gamification elements than Ruangkerja because there is a difference of the target learner.

6.BENEFITS AND RISKS OF GAMIFICATION

The strengths of gamification and schools can be complementary, but they are not necessarily so. There are significant ways in which gamification and schools could each make the other worse. Bringing education and game elements together could turn out two great factors working together, leading to results that are especially important for developing 21st century skills.

Gamification can motivate students to engage in the classroom, give teachers better tools to guide and reward students, and get students to bring their full selves to the pursuit of learning. It can show them the ways that education can be a joyful experience, and the blurring of boundaries between informal and formal learning can inspire students to learn in life wide, lifelong, and life deep ways. The challenges, however, are also significant and need to be considered. Gamification might absorb teacher resources or teach students that they should learn only when provided with external rewards. On the other hand, playfulness requires freedom - the freedom to experiment, to fail, to explore multiple identities, to control one's own investment and experience. [9]

7.CONCLUSION

Game elements and activities, the presented outcomes are insufficient to draw definitive conclusions on the effectiveness of gamification on students' engagement, learning or participant.

In short, some gamification projects will succeed, and others will fail. Gamification is not a universal panacea. If we are to improve the odds of gamification providing value to schools, we must carefully design gamification projects that address the real challenges of schools, that focus on the areas where gamification can provide the maximum value, that are grounded in existing research, and that address the potential dangers of gamification for both games and schools. In tandem with the creation of gamification projects, we must develop meaningful assessments of whether they are achieving their aims.

As gamification spreads throughout the real world, there is little question it will also impact in the schools or company. By leading with research-based, theory-driven gamification projects, we can work to ensure that the impact of gamification is a positive one. Gamification will be a part of students or employee lives for years to come. If we can harness the energy, motivation and sheer potential of their gameplay and direct it toward learning, we can give students or employees the tools to become high scorers, good capability and winners in real life.

Gamifying learning, above most things, provides a focus once attention is captured and inspired. It acts on multiple senses for an immersive experience that increases our enjoyment and desire to achieve goals. This response to purely recreational games is now being harnessed and used in the business world. Consider how beneficial it would be

if a salesperson is focused on winning customer as they might be in passing to the next level on a video game.

Ultimately, gamification gives us goals and goals give purpose. When used properly, it uses our natural tendency to be goal-orientated and to set standards we want to achieve in the future. Gamification goes beyond physical rewards and promotes a mindset of constant achievement. Having learners set their own goals for the course and then measuring their progress toward the goal is a way for you to motivate employees when taking an eLearning course and ensure they are committed. There are certain situations when this might not be what you want to engage in your learner but more often than not gamification works where other training methods fail horribly. [10]

ACKNOWLEDGMENT

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