The Relationship Between Gamification Implementation And Student Involvement

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Abstract

The report of the Department of Islamic Development Malaysia (2015) showed that the approach of teachers who tend to use traditional teaching methods has caused students to feel bored and less active in the class. The teaching class time factor that took place in the afternoon also reduced the students 'interest to pay attention to teaching & learning (T&L) in the KAFA class. A statistical report in the United Kingdom Global Gaming Stat states 74% of K-8 educators use digital games to promote the learning process and 33% use games to increase students 'motivation and skills levels while 29% reported conducting formative assessments of skills and knowledge student base. In addition, 56% of parents stated that the use of games to educate students has a positive impact on their children. In particular, this research has the main objectives of (1) to develop gamification modules to be applied by teachers in the classroom 2) To test the effect of gamification modules on student motivation on the content of Curriculum3) To test the effect of gamification modules on student engagement on content curriculum. This study uses two types of study design, namely module development design and quasi -experimental design to develop and test the Gamification module on student motivation and involvement in the Curriculum. This research uses five phases of the ADDIE Model which

includes 5 main phases namely needs analysis phase (phase 1), model design phase (phase 2), development phase (phase 3), implementation phase (phase 4) and model evaluation phase (phase 5) . The results of this research will develop gamification modules that meet the needs of students to be applied by teachers in the T&L process. Significantly, this study provides guidance to teachers to implement gamification-based pedagogy especially for subjects in line with the transformation of mainstream education based on the vision of prosperity together 2030, JAKIM Strategic Plan 2019-2025 core 3 which is Building Superior Personality Through Empowerment of Education System Towards Prosperity and PPPM 2013-2025.

Keywords: Gamification, Education, Student Involvement

1 .0   Introduction and Background

The Ministry of Education Malaysia (MOE) under a National Education Philosophy wants to produce comprehensive human beings in terms of physical, emotional, spiritual, intellectual and personality. Change after change is made by the MOE in line with current developments and demands. Various skills need to be provided and applied to students to enable them to be competitive and have added value, at the same time it is able to increase potential and talent at the highest level. Through this philosophy, holistic education needs to be emphasized as education plays an important role in creating quality human resources to possess the ability to compete with challenges and developments in the 21st century era (N.Ahmad & Khalid, F. (2017).

2 .0   Problem Statement

This is based on the perception of 409 teachers from 4 zones in Malaysia. The findings of the study from (Hidayat B et al, 2018) showed the mean score for the teaching strategy of teachers at a moderate level in terms of teaching strategy (mean = 3.09, Sp = 0.584). While the mean score for BBM at a moderately low level is the method (mean = 2.97, Sp = 0.680 and the mean score for BBM is (mean = 2.43, sp = 0.545)

However, what happened through continuous research from 1994 to 2017 from various institutions and researchers shows the level of R & D among teachers and students can still be questioned, especially from the aspects of strategy implementation, teaching aids (BBM), teaching methods, and professionalism.

There are studies conducted stating digital games have negative effects especially when resulting in addictive effects on digital games and the effects of violent actions displayed in games (Hanafiah, S.H.M., Majid, A.H.A., Teh. K.S.M. (2019). According to the analysis of (Stott, A. & Neustaedler, C. (2015) through the study conducted found that most of the negative effects of digital games are focused on aspects of digital game addiction, the influence of violent behavior on players, health and psychological problems, obesity and community ideological problems. This negative effect has contributed to the tendency for students to do things that violate discipline such as skipping school.

Although previous studies have focused more on negative effects but recent studies have focused more on the discussion of positive effects because digital game design has the potential to be used in learning environments. Among the effects noted by most researchers is the potential of digital games to enhance students 'learning motivation (Lednor, 2019).

According to Scott A et al. (2015), through the use of digital games in education, low

interest, attention and motivation by students can be enhanced because the curriculum area is indeed difficult to teach without any compelling encouragement. However, there is no specific study related to the effectiveness of games on student motivation in this country, however, indications of the effect of this motivation can be seen in Malaysia when it is said that one of the symptoms of skipping school is due to digital games which are one of the stimulus and attraction. According to Suhaimi,F.M, Ab Rahman A& M. Faisal Yap M.J., (2018) the revelations made by the media show that most of the students who skip school are found relaxing in digital game centers. This situation does not only occur at the school level under Ministry Of Education (MOE).

The JAKIM report (2018) also shows that the approach of teachers who tend to use traditional teaching methods has caused students to feel bored and less active in the class. The teaching class time factor that takes place in the afternoon also reduces the interest of students to give their attention to teaching and learning in the class. Pupils are also wrong to attend KAFA classes because at the same time there are also co -curricular activities and additional classes held.

Therefore, according to the findings of several studies, digital games (gamification) in education have been found to increase student engagement and learning performance (Wong, 2012; N.Ahmad & Khalid, F.,2017) as well as encourage competition and challenge activities to achieve a goal (N.Ahmad & Khalid, F.,2017; Lednor, 2019). This is because through digital games (gamification) in education, students are more motivated to try to overcome current scores and performance. It is more conducive to a healthy competition in learning. Digital games have also become one of the games of interest among children because of the opportunity to play roles like others (Dichev, C. & Dicheva, D, 2017) and offer a variety of presentations and applications of knowledge Students have the opportunity to try to create and try something that out of the ordinary in the context of digital gaming. Development. the potential of students can be enhanced through digital games in education.

Learning objectives and game objectives can be understood through the storyline presented (Pramana, 2015) through digital games (gamification) in education apart from the learning process that can be done while the game is played (Suhaimi et al, 2017). Digital games (gamification) in education can also improve problem solving skills, increase motivation and socialization (Ahmad N & Khalid, F, 2017). In addition, it can also improve communication skills, appreciate others, try to achieve the same goals and increase involvement in problem solving efforts (Squire, 2013) as well as can improve cognitive and psychomotor skills (Ahmad N et al, 2017).

The learning that occurs is also easier and easier to understand as well as the learning that occurs without students being aware (Azman, 2018) because students play without being aware of the learning process that takes place. The study of Buck, M. F., (2017) found that the positive effects of digital games in the classroom can improve learning performance experimentally where students can explore the human immune system independently in promoting elements of support, teamwork, communication and interaction normally.

Therefore, based on the problematic issues that exist in the curriculum system, the approach of using gamification modules is proposed as a method to develop the curriculum in line with the goals set out in the JAKIM Strategic Plan 2019-2025

Literature Review

Gamification shows a spiral of motivational concepts that start from various needs, wants or desires that result in the emergence of motive urges in the individual. Through insistence, it has produced tension and anxiety that produces motivated behavior that will lead to a goal. When goals have been achieved and needs met, students will receive reinforcement in the form of intrinsic or extrinsic rewards that result in a student repeating motivated behaviors (M.F.Yap. 2018).

Two types of motivation based on internal domain and external domain are intrinsic motivation and extrinsic motivation. Intrinsic motivation is better known as internal motivation. The result of this intrinsic impulse exists to meet physiological and psychological needs (Azman et al, 2018). This motivation is one of the natural characteristics of human beings who always want to respond and overcome all challenges and obstacles to get what they want. Various factors are associated with this motivation, such as needs, interests, curiosity, self - satisfaction and so on.

When a person has been driven to have intrinsic desires, all forms of incentives or punishments in order to perform activities or actions are not required because everything he does is to meet the inner satisfaction and needs of a person. It clearly proves that not all behaviors can be shaped through reinforcement schemes. This is because some behaviors performed by an individual have gained a form of internal satisfaction as a result of it (M.F.Yap. (2018).
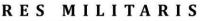
Extrinsic motivation is the opposite motivation when compared to intrinsic motivation. Extrinsic motivation is more towards the desire to perform an action due to factors from outside the individual (external) (Pramana, 2015). This extrinsic motivation aims to get rewards such as gifts, certificates, compliments, avoid being subjected to any punishment, get attention. In other words, this motivation is done only for the purpose of fulfilling short-term and self-fulfilling desires and exists due to a desire for recognition and consent alone.

Students will feel themselves manipulated to get praise and rewards if extrinsic motivation occurs (Hairul M, 2018). Apart from that, learning will only be considered as a bridge to achieve a goal and the transfer of learning will be more difficult because once the extrinsic rewards are received, all forms of learning learned will be easily forgotten. This motivation will result in more dependence on teachers to achieve success. Therefore, any motivation given to students must be appropriate to the learning situation in the classroom. This will to some extent affect the behavior and involvement of students especially in learning.

3.1 Gamification in Teaching and Learning

Gamification is the latest popular approach that uses the application of human computer interaction experience (HCI), psychology and digital game development to stimulate human engagement and motivation. This is because gamification techniques are capable of influencing changes in human behavior (Buck 2017; Azman et al, 2018). fields of marketing (Dichev, C. & Dicheva, D, 2017), social media and websites (Farhana et al, 2018), health (Hanafiah, 2019), retail and consumer motivation (Lednor, 2019). Employee motivation (Manirah, 2016) is among the fields that have used the gamification concept approach to influence user behavior. The field of education also receives the impact of gamification (Hairul M, 2018). M.F.Yap. (2018) has clearly stated in his book that gamification approach in education is able to help students enrich the learning experience by stimulating various skills such as critical thinking skills, creative, 21st century skills and problem solving skills.

The term gamification is a term borrowed from English namely gamification (Stott, A. & Neustaedler, C. 2015). In general, gamification is defined as an approach that becomes a new trend by introducing the integration of video game mechanics and dynamics out of its context (Pramana, 2015;Buck 2017). (M.F.Yap. (2018) has reported that the use of the term gamification for the first time began in 2008.

However, it is often not used until late 2010 because of confusion with various other terms such as game layer, applied game, productivity games, fun ware , playful design, or behavioral games. Here are the elements of the game mechanics, namely points (points), levels (levels), challenges (challenges), virtual items (virtual goods), leader-boards (leader-boards), badges (badges) and gifts (gifts and charity) (World Government Summit, 2016). Next is the dynamics of the game according to (Stot et al., 2015) is reward (reward), status, level of achievement (achievement), self-expression (self-expression), competition (competition), and altruism (altruism).

The mechanics and dynamics of these video games are implemented through various fields or domains that have no direct relevance to video games (World Government Summit, 2016). This statement is supported (Hairul M, 2015) who states that gamification has the potential to solve problems that cover various areas in human daily life. Examples are productivity, business, healthcare and education (Dichey, 2017; Hanafiah, S.H.M et al, 2019). In addition, gamification is also practiced on a large scale such as business, ecology, mobile communication, coffee house services, and the latest is in education (Dichev, C. & Dicheva, D. (2017). Or known as MDA framework, has been designed based on video game development theory (Buck, 2017) .In a video game environment, video game designers set in advance sets of rules to build a game system that can provide a satisfaction and enjoyment to the player.

4.0 Method

4.1   Research Design

This study will use two types of research design, namely model development design and quasi-experimental design to develop and test the Gamification module on student motivation and involvement in subject. The five phases of the ADDIE Model involving a needs analysis process, design, development, implementation and evaluation will be adopted. Quantitative and qualitative approaches were used to collect data through the ADDIE process.

For the first phase of needs analysis, an online questionnaire application (google form) was used. Data were collected from a sample of education division officers in state and district Religious Departments, headmasters, students and lecturers specializing in Education. This group answered questions related to the need to build a Gamification module. Through this phase, researchers find data related to the need to develop modules. Next the researcher conducted a literature review related to the need to develop this module (J. Pallant., 2010, Field A., 2012).

Researchers use a quantitative approach (descriptive statistics) to explain the findings of the study. At the end of this phase, the researchers expect to find outcomes such as a list of

needs, theories and models of student motivation and engagement as well as a list of key elements of the development of this module (Chua Y.P (2011). This phase is detailed in table 1.

Table 1: Needs Analysis Phase

Methodology	Description
Data Collection	Data Collection Methods Literature review, questionnaires and interview protocols
Study Sample	100 people (questionnaire) and 10 people (interview - 1 JAIPK officer, 2 head teachers, 2 teachers and 5 students)
Analysis	Descriptive Statistical Data Analysis
Results List	Descriptive Statistical Data Analysis of requirements, theories & models, list of module elements

4.2   Population and Study Sample

This study involves 100 teachers while 10 people 10 people will be interviewed involving- 1 JAIPK officer, 2 headmasters, 2 teachers and 5 students) with the distribution of the study using folk religion schools in Perak. The total number of teachers in Perak is 3,385 based on information from the Education Department. Therefore, based on the table (Creswell, John.W.,2017) through the determination of the sample from the appropriate total population set of 100 people is appropriate to ensure higher data validity.

4.3   Data Collection and Analysis

The findings of the data obtained were analyzed by researchers to answer the objectives of this study. From the data obtained, it is hoped that researchers can identify the need for the production of gamification modules based on student involvement.

The reliability for this questionnaire is at a high level that is the value of Cronbach's Alpha recorded (0.82173). SPSS 20.0 was used to find the frequency, percentage and mean values (Creswell, John .W. (2017). Table 2 shows for the reliability values for cognitive intelligence recorded (0.7727), self -control (0.8905), learning motivation (0.8020), commitment recorded (0.7954) and social skills recorded 0.8124

Table 2: Values of Reliability Coefficients of Questionnaire Instruments

Cronbach's Alpha Value	Variables
EMOTIONAL INTELLIGENCE	
Cognitive Awareness	0.7727
Self -Control	0.8905
Learning motivation	0.8020
Commitment	0.7954
Social Skills	0.8124

A five -point Likert scale was used in this study. The scoring method used is Strongly Disagree (STS) with a score of 1 point, Disagree (TS) with a score of 2 points, Not Sure (KP) with a score of 3 points, Agree (S) with a score of 4 points and Strongly Agree (SS) with a score of 5 points. The data obtained were analyzed using descriptive and inferential statistics involving frequency, percentage, mean and Pearson Correlation (Cronbach. L. J. (1946). .

5.0 Discussions

Discussion of the first findings through descriptive analysis. This is to answer the objective of identifying the needs analysis for the implementation of gamification modules

Table 3: Mean and standard deviation analysis for study variables of gamfication module requirements analysis on student engagement

Bil	Variable	Min	SP
1.	Cognitive Awareness	3.4568	.49978
2.	Self Control	3.3451	.57894
3.	Learning motivation	3.4159	.49508
4.	Commitment	3.6460	.48033
5.	Social skills	3.5575	.49889

Based on this table, showing cognitive awareness recorded a moderate mean that teachers from the emotional aspect understand cognitive ability in an incomplete state. Therefore, it is necessary for teachers to understand the elements that can evoke self-worth to be practiced and highlighted. When cognitive awareness, elements of self -regulation and learning motivation will also be in a moderate mean state. The three elements are interrelated and each teacher should improve knowledge especially in developing clear self-values and be able to deal with any problems that exist.

For the elements of commitment and social skills showing teachers recorded moderate values that describe the attitude of love, compassion, helpfulness, interaction with the community, affected by disasters and cooperation is something that needs to be improved. This is because the elements become a priority when MCO occurs because without the strength of emotional stability it is difficult for teachers to implement the gamification module process effectively and together with the community in the event of a problem such as Covid issue 19 (Suhaimi,F.M et al, 2018)

Discussion of the second findings through inferential analysis. This is to answer the second objective, which is to examine the relationship between the construction of gamification modules and student involvement

Table 4: Correlation analysis between the relationship between gamification module construction and student engagement

	Use of Gamification Materials	Teaching Via online	Internet access	Online student readiness
Cognitive Awareness	.374**		.351*	.168*
Self Control	.374**	.285**.	.392**	.072
Learning motivation	.250**	.250*	.436**	.065
Commitment	.392**	.436**	.351*	.044
Social Skills	.072	.065	.044	.168*

N = 171P <0.01* P <0.05 **

Based on the analysis shows the relationship between cognitive awareness is at a moderately high level with the use of gamification materials, online teaching and internet

access while the relationship with students' readiness to attend online classes is at a moderate state. These findings indicate the need for teachers to increase the elements of seriousness, commitment and adequate preparation in the implementation of T&L because it is found that there is still room to improve effective T&L.

Based on the analysis shows that the relationship between self -control is at a moderately high level with the use of gamification materials, online teaching and internet access while the relationship with students' willingness to attend online classes is at a moderate state. These findings indicate that teachers need to increase resilience to face external factors especially when T&L is implemented.

Based on the analysis shows that the relationship between learning motivation is at a moderately high level with the use, use of online teaching gamification materials and internet access while the relationship with students' willingness to attend online classes is at a moderate state. These findings show that teachers need to be constantly motivated to improve so that student performance can be improved (Lednor, P. W., 2019)

Based on the analysis shows that the relationship between commitment is at a moderately high level with the use, use of online teaching gamification materials and internet access while the relationship with students' willingness to attend online classes is low. These findings show that there is still a need to improve the values of love, cooperation and caring among teachers so that for students who have problems related to virtual learning can be solved every problem that exists (Ab Rahman. A, 2018).

Based on the analysis shows that the relationship between social skills is at a low level with the use, use of online teaching gamification materials and internet access while the relationship with students' readiness to attend online classes is at a moderately low state. These findings indicate no clear relationship between the implementation of T&L with aspects of social skills such as interaction, intrapersonal and intrapersonal, therefore the need for these elements does not impact teachers 'emotional intelligence.

Discussions related to the results of the study have been analyzed in a correlation based on aspects of the relationship between the construction of gamification modules and student involvement. This data was analyzed based on a questionnaire to answer the second objective

5.1   The Relationship of Cognitive Awareness and Gamification Module Development

Researchers found that cognitive intelligence for the aspect of cognitive awareness with the impact of T&L implementation among teachers was at a moderately low level based on the data showing (.374, .250, .351 and .168). Based on the findings of this study shows that teachers who have self -management skills such as not being able to deal with financial problems, family problems and movement problems will result in an impact on the teaching and learning process in schools. But it is not the main factor that affects it. The findings are in line with a study by Buck, M. F (2017) who explained that in implementing a change of consciousness, teachers need to be facilitators of change through the dimensions of self -development to others, organizational competence and change strategies

This proves that T&L will affect the teacher's self -element and in turn affect the T&L process in the classroom. However, some elements that need improvement are related to teachers' self -awareness to influence students in the implementation of teaching. This may be due to the constraints of the use of devices, time and online approaches are limited. Overall, this study found that there is a moderately low emotional intelligence in terms of self - awareness among teachers

5.2   Self -Control Relationships and Gamification Module Development

Teachers' emotional intelligence from the aspect of social indicators is at a moderately low level based on the data that show (.374, .285, .392, .072). Based on the findings of the study shows that self -control of teachers is necessary in making decisions if the health situation in the school is in an unsatisfactory state. This shows that there is still an aspect of the ability of teachers to implement positive and proactive actions especially during module development and clearly in the decision-making ability among teachers. This is in line with the findings that teachers need to prepare themselves in all aspects when faced with a changing world in order to be able to adapt to any situation (Dichev, C. & Dicheva, D, 2017).

However, some of the improvements that need to be made are related to teachers having an empathetic nature for students to understand the objectives even if the approach is virtually implemented. The need for teachers to always be positive and apply what is known is important despite this approach which is difficult to implement at the school level due to constraints from the aspect of S.O.P

5.3   Relationship of Learning Motivation and Gamification Module Development

The construction of gamification modules with learning motivation was at a moderately high level based on the data namely (.285, .250, .436 and .065). Based on the findings of the study shows that teachers are always motivated in the process of ensuring the implementation of teaching can be implemented even in the constraints of T&L. This proves that KAFA teachers always reflect on themselves to form a close relationship with students even when conducting T&L. This is in line with a study by (Stott, A. & Neustaedler, C, 2015). The implementation of online learning requires students to build stable motivational skills. Students can no longer use the previous set of thoughts, which is to wait for the teacher or lecturer to speak or lecture before starting to learn. To build learning motivation in students, teachers need to build good self -efficacy and conditions need to be implemented continuously.

However, the need to improve the development of motivation of each teacher is an important core in ensuring that teachers are able to handle their emotions well and school administrators need to increase self-worth development programs either through LIVE STREAMING or WEBINAR as appropriate.

5.4   Relationship of Commitment and Development of Gamification Module

The construction of gamification modules with commitment is at a moderately high level based on the data (.392, .436, .351 and .044). This proves that teachers are always able to manage the pressure to come to work due to the additional transportation to get to school, moreover during movement control orders that require SOP compliance are implemented, This adds more time and difficulty to teachers to get to school

The impact of MOE from the aspect of commitment relationship can be examined from the aspect of how the interpretation of the sense of pleasure of work can be appreciated by teachers. Appreciation of the work is implemented despite the constraints from the aspect of

relationship because it involves virtually. For improvement, teachers, schools, local communities and ministries need to form a group in school

5.5   *Social Skills Relationships and Construction of gamification modules*

The construction of gamification modules with social skills is at a low level based on the data, namely (.072, .065, .044 and .168). This shows that no MOE relationship has caused social skills such as interpersonal and intrapersonal relationships with students, parents or the local community. now, many communication alternatives can be used such as social media, telephone and electronic media.

This is in line with the findings of Ledner (2019) who stated that early experience and exposure through the socialization process will give confidence to teachers and students and it will be a supply to grow positively despite the constraints in a situation.

5.6   Overall Findings

This study summarizes the diversity of gamification module construction with student involvement being at a moderate level. To that end, teachers need to focus on the bonding of relationships from all aspects of stakeholders whether on the part of the government, the community, teachers, family members, school administrators and students. The whole element is able to form a more stable and structured emotional network in ensuring the effectiveness of teaching.

The overall summary of the findings of this study can strengthen and strengthen the need for the development of gamification modules in understanding some new questions so that community understanding can be obtained as a guideline in ensuring the sustainability of student performance can be improved.

6.0   Implications to the study

The implications of the study show the importance of implementing gamification in producing good engagement from students. The approach of using games makes students follow each learning content in a more organized and quality way. This study is also to fill other studies related to gamification and form a clear direction of how this gamification approach in shaping students' thinking and involvement

7.0 Acknowledgment

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