

Gaming in Motion (Gameotion): A Web Portal for Physics- conceptualized Game

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Abstract

The research aimed to design and develop the Gaming in Motion (Gameotion): A Web portal for Physics-conceptualized games that consist of educational games which may solve the current problem of the Physics learners. Research shows that the impact of the current educational games is far from expected due to varying factors that go boring, inappropriate game design, and difficulty adapting the games to different educational contexts. To bridge this gap, this the study determined the acceptability of Gameotion in terms of content, accessibility, aesthetic, experience, and functionality; the overall level of acceptability of Gameotion as rated by the respondents; and the significant difference in the respondents' ratings on the acceptability of Gameotion. The study used the descriptive and developmental research method in designing the web portal. Also, a black box technique was used for testing accompanied by Technology Acceptance Model for the evaluation phase. This was conducted to 80 persons inside the Division of Laguna, composed of 40 Science Teachers and 40 I.T. experts. The selection of respondents was based on a non-random sampling technique. The study utilized Mean, Standard Deviation, and T-test to answer the research objectives. The findings show the following statistical results for the acceptability of Gameotion in terms: content (Teachers-M=4.70, SD= 0.52; Expert- M=4.57, SD= 0.60), accessibility (Teachers-M=4.68, SD= 0.52; Expert- M=4.40, SD= 0.67), aesthetic value (Teachers-M=4.72, SD= 0.50; Expert- M=4.52, SD= 0.60), experience (Teachers-M=4.69, SD= 0.53; Expert- M=4.44, SD= 0.62) and functionality (Teachers-M=4.75, SD= 0.51; Expert- M=4.53, SD= 0.63) which are all interpreted as Very High. In conclusion, the group of respondent results shows that the overall acceptability of Gaming in Motion (Gameotion): A web portal for Physics-conceptualized games in all indicators is verbally interpreted as "Very High." It can be therefore inferred that at a 0.05 level of significance, the null hypothesis stating that there was no significant difference in the respondents' ratings on the acceptability of Gameotion, a web portal for Physics-conceptualized games among the groups of respondents was partially rejected. Further, the analysis of the content and functionality indicators showed "not significant" relationship; while the indicators accessibility, aesthetic value and experience were "significant." The Gameotion, a web portal for a Physics-conceptualized game can be an additional learning material. Consultation and assistance of Computer/IT experts can greatly contribute to enhancing the Gameotion.

Keywords: game-based learning, web portal, Physics, Technology Acceptance Model, Educational Game

1. INTRODUCTION

Game-based learning is a type of learning material that uses games as a medium in an educational environment. Generally, it is designed to balance subject matter with gameplay and the ability of the player to retain and apply the subject matter to the real world. Game-based learning is an approach to teaching where students explore relevant aspects of games in learning content designed by the teachers (**Gaydos & Devane, 2019**).

Before the pandemic, students were already losing interest in studying as they have foreseen how traditional techniques uses repetition and memorization of information to educate students. It was observed that online learning was way better than traditional textbook-based learning because digital learning has been promoted as an effective method in enhancing students' interest and improving learning efficiency (**K, P, P, N, & Nagaral, 2019**).

Some of digital learning materials are now being transferred and accessed through a web portal. A web portal is designed to bring information came from the diverse sources like emails, online forums, journals, and search engines. A web portal is also a great tool for implementing games with educational purpose (**Sadiku, Adebo, & Musa, 2018**).

Thus, the researcher aims to know the acceptability of a game-based learning using a web portal in a particular lesson in Physics by developing a learning material entitled Gaming in Motion (Gameotion): A Web Portal for Physics-conceptualized Game that engage students in learning the Physics subject.

1.1 Objectives of the Study

This study is designed to develop a web portal for A Physics-Conceptualized Game to engage students and utilize other educational services that could be improved by using a web portal. The following statements are the specific objectives of the study:

1. Determine the level of acceptability of Gaming in Motion (Gameotion): A web portal for Physics-conceptualized games in terms of
 - 1.1 Content
 - 1.2 Accessibility
 - 1.3 Aesthetic
 - 1.4 Experience
 - 1.5 Functionality
2. Determine the overall level of acceptability of Gaming in Motion (Gameotion): A web portal for Physics-conceptualized games, as rated by the respondents.
3. To Determine the significant difference in acceptability of Gaming in Motion (Gameotion) A web portal for Physics-conceptualized games as rated by a group of respondents.

METHODOLOGY

2.1 Research Design

The researcher used the developmental research designed as part of a systematic design, development, execution, and evaluation study. It is labeled as ‘transformational research’ by NCTM Research Advisory Committee, which means research that does not focus on ‘what is’ but deals more broadly with ‘what ought to be.’ This involves, for instance, research addressing how to constitute education that meets certain pre-given standards or ideals (Gravemeijer, 1998).

The researcher also used descriptive research wherein events are recorded, described, interpreted, analyzed, and compared (Castillo, 2002). Descriptive designs include observation, surveys and interviews, standardized tests, and case studies.



Figure 1. ISO 25010 Software Quality Metrics Model. This figure shows the different types of quality metrics that determine which quality characteristics will be considered when evaluating the properties of the software.

Descriptive research simply describes what is prevalent with respect to the issue or problem under study. It simply does not fit neatly into the definition of either quantitative or qualitative research methodologies. Instead, it can utilize elements of both, often within the same study. The term descriptive research refers to the type of research question, design, and data analysis that applied to a given topic. Descriptive statistics tell what is, while inferential statistics try to determine cause and effect.

2.2 Respondents of the Study

Respondents of the study are Science teachers and I.T. experts from any school or organization with the Division of Laguna. Experimental group was treated by using the Gameotion Web Portal to test and examine the functionalities and user experience using free-hosting website that was forwarded to the random Science teachers and I.T. experts who tested the developed web portal.

The selection of respondents is based on a non-random sampling technique. According to Bryne (2016), sampling is the process of obtaining the participants of a study from a larger pool of potential participants termed the population. Non-random is a sampling technique where the sample selection is based on factors other than random chance. The researcher specifically will use quota sampling. This sampling uses a predetermined number of the population sampled.

2.3 Research Instrument

The researcher constructed self-made questionnaires for each user group that will serve as a tool for utilizing and obtaining user feedback and the satisfaction level of the users. Questionnaires are created based on the Technology Acceptance Model factors in terms of Quality Factors, Perceived Ease of Use, Perceived Usefulness, Attitude towards Using, Behavioral Intention to Use, and Experience. According to Adewumi, Misra, & Omoregbe (2015), ISO 25010 is the replacement of ISO/IEC 9126 but consists of a higher standard in terms of the quality model. It is now the new degree for a quality model of a system that gives a stronger and firm assurance for the users of the product. Therefore, the researcher incorporates the ISO 25010 into the Technology Acceptance Model to provide an accurate and reliable assessment and acquire every user's perception using the TAM criteria based on the quality model applications from ISO 25010.

The researcher utilized the **5-point Likert Scale** to rate the respondents' perception from 1 to 5, with 5 as the highest rating. The levels (or scale) used to differentiate between the Remarks Strongly Agreed, Agreed, Moderately Agreed, Not Agreed and Strongly Disagreed. Each level is accompanied by a criterion, or set of criteria, that specifies what is needed to reach that level of quality.

Ratings	Scale	Remarks	Verbal Interpretation
5	4.21 - 5.00	Strongly Agreed	Very High
4	3.41 - 4.20	Agreed	High
3	2.61 - 3.40	Moderately Agreed	Moderately High
2	1.81 - 2.60	Not Agreed	Low
1	1.00 - 1.80	Strongly Disagreed	Very Low

Table 1. Likert Scale

2.4 Statistical Treatment

In the evaluation phase, to determine the Technology Acceptance ideal level of satisfaction of the users towards Gameotion: Web Portal, weighted mean and standard deviation were used to get the results of the gathered data as a statistical treatment. T-tests used to measure the acceptability of materials by comparing the two standard deviations of two samples and checking the variability.

3. RESULTS AND DISCUSSION

This section presents the analysis and interpretation of results from the researcher's survey findings. This also aims to answer the objectives as a basis for evaluation of Gaming in Motion (Gameotion): A Web Portal for Physics-conceptualized Game. The researcher used Google Forms to distribute the survey questionnaires via online to random Science teachers and I.T. experts in the field.

3.1. Determine the level of acceptability of Gaming in Motion (Gameotion): A web portal for Physics-conceptualized games in terms of:

- 3.1.1 Content
- 3.1.2 Accessibility
- 3.1.3 Aesthetic
- 3.1.4 Experience
- 3.1.5 Functionality

Level of Acceptability of Gaming in Motion (Gameotion): A Web Portal for Physics-conceptualized Game in terms of Content

Table 1 shows the level of acceptability of the Gaming in Motion (Gameotion): A Physics Conceptualized Game in terms of Content where the researcher emphasizes the presence of certain words, themes, and concepts according to the understanding of every user involved in this developing system. By analyzing the research project, users can identify what type of learning material Gaming in Motion (Gameotion) is. With its content, users may know that Gaming in Motion (Gameotion) is a type of learning material that aims to make learning more interactive and entertaining through the help of a web portal that can be accessed on any device that has an internet connection.

Table 1. Level of Acceptability of in terms of Content

<i>The Web Portal...</i>	TEACHERS			EXPERTS		
	MEAN	SD	REMARKS	MEAN	SD	REMARKS
1. is manageable and requires less effort to understand.	4.60	0.55	Strongly Agree	4.43	0.64	Strongly Agree
2. Provides specific direction on how it operates.	4.80	0.46	Strongly Agree	4.58	0.59	Strongly Agree
3. Has the appropriate level of complexity for the viewer’s capability?	4.55	0.60	Strongly Agree	4.43	0.68	Strongly Agree
4. Highlights the features (Modules, MELC, Game application, and Additional activity) that help to improve student learning.	4.75	0.49	Strongly Agree	4.75	0.49	Strongly Agree
5. Provides topics and assessments aligned to Most Essential Competencies.	4.78	0.48	Strongly Agree	4.68	0.53	Strongly Agree
Overall Mean		4.70			4.57	
SD		0.52			0.60	
Verbal Interpretation		Very High			Very High	

Table 1 illustrates the level of acceptability of Gaming in Motion (Gameotion): A Physics Conceptualized Game in terms of Content. The teachers observed that the content of Gameotion provides specific direction on how it operates which yielded the highest mean score (M=4.80, SD=0.46) and was remarked as Strongly Agree. Likewise, Gameotion provides topics and assessments aligned to Most Essential Competencies with a mean score (M=4.78, SD=0.48) and was also remarked as Strongly Agree. On the other hand, Gameotion has the appropriate level of complexity for the viewer’s capability although it received the lowest mean score of responses with (M=4.55, SD=0.60) yet it was still remarked as Strongly Agree.

On the other hand, experts on the other group of respondents find that the content of Gameotion highlights the features like Modules, MELC, game application, and additional activity that help to improve student learning. It yielded the highest mean score (M=4.75, SD=0.49) and was remarked as Strongly Agree. In addition to this, Gameotion also provides topics and assessments aligned to Most Essential Competencies that resulted a mean score of (M=4.68, SD=0.53) and was also remarked as Strongly Agree. The statements in the content of Gameotion are manageable and require less effort to

understand. It also has the appropriate level of complexity for the viewer’s capability although it received the lowest mean score of responses with (M=4.43, SD=0.64) and (M=4.43, SD=0.68) yet it was still remarked as Strongly Agree.

According to (Chintalapati, 2017) content must fill the ideas based on how the project obtained the raw data from the beginning. It must also reflect the critical parts of the research to strengthen the results from other users' perspectives. Moreover, it is the body of a research project. Content is like a book structure, containing the vital information a user should obtain.

Swanson et. al (2017) the authors analyzed the series of intervention studies investigating the possible effects of learning content knowledge outcomes. In this research, they found out how game-based learning improves an individual’s test performance.

Level of Acceptability of Gaming in Motion (Gameotion): A Web Portal for Physics-conceptualized Game in terms of Accessibility

Table 2 shows the level of acceptability of the Gaming in Motion (Gameotion): A Physics Conceptualized Game in terms of its Accessibility where it can be defined as the quality attribute that assesses how easy user interfaces are to use. Accessibility also refers to how physical, psychological, and social environments are designed to ensure that everyone can interact with others on an equal basis despite their individual characteristics. To make the project accessible, the researcher developed a web portal like Google Classroom that has several updated features. Gameotion shows the significant result of utilizing the developed system as easily as accessing the mainstream web services since it was established as a web portal.

Table 2. Level of Acceptability of Gameotion in terms of Accessibility

<i>The Web Portal...</i>	TEACHERS			EXPERTS		
	MEAN	SD	REMARKS	MEAN	SD	REMARKS
1. Provides features and functions that make it easy for users to operate and control.	4.73	0.51	Strongly Agree	4.35	0.66	Strongly Agree
2. Can be accessed without error or drawback while answering every game application and reading modules assigned.	4.60	0.55	Strongly Agree	4.15	0.74	Agree
3. Was utilized smoothly and efficiently.	4.58	0.55	Strongly Agree	4.13	0.72	Agree
4. Has a feature (Modules, MELC, Game application, and Additional activity) that gives a greater POV in accessing another educational tool that is just as easy as this one.	4.75	0.49	Strongly Agree	4.75	0.44	Strongly Agree
5. Features have a user-friendly interface.	4.73	0.51	Strongly Agree	4.60	0.55	Strongly Agree
Overall Mean					4.40	
SD		4.68			0.67	
Verbal Interpretation		0.52			Very High	
		Very High				

Table 2 shows level of acceptability of Gaming in Motion (Gameotion): A Physics Conceptualized Game in terms of Accessibility. The teachers observed that the accessibility of Gameotion has features like Modules, MELC, game application, and additional activity that gives a greater POV in accessing another educational tool that is just as easy as this one. It yielded the highest mean score (M=4.75, SD=0.49) and was remarked as Strongly Agree. Another is that Gameotion provides features and functions making it easy for users to operate and control. Likewise, it features a user-friendly interface. These statements yielded a mean score (M=4.73, SD=0.51) and were also remarked as Strongly Agree. On the other hand, the statement describing the accessibility of Gameotion says that it was utilized smoothly and efficiently which received the lowest mean score of responses with (M=4.58, SD=0.55) yet was still remarked as Strongly Agree.

The experts’ observation on the accessibility of Gameotion concludes that it has features like Modules, MELC, game application, and additional activity that gives a greater POV in accessing another educational tool that is just as easy as this one. It also yielded the highest mean score (M=4.75, SD=0.44) and was remarked as Strongly Agree. Likewise, Gameotion also contains features that have a user-friendly interface. It has received a mean score of (M=4.60, SD=0.55) and was also remarked as Strongly Agree. On the other hand, Gameotion was utilized smoothly and efficiently, and received the lowest mean score of responses with (M=4.13, SD=0.72) and was remarked as Agree.

Based on the paper written and published by (Yuan, Folmer, & Harris Jr., (2020) it states how a game can be accessible to everyone. In this paper, they managed to pick every struggle learner could encounter in accessing a game-based learning material and find a solution to this problem. In addition, they also conducted a survey to identify the impact of implementing an accessible game-based learning material for different people, especially in an extraordinary case, including health issues, social groups, and foreign learners. As a result, it boosts the promotion of using game-based learning materials not only limited to elementary schools but also in secondary and tertiary school levels.

Level of Acceptability of Gaming in Motion (Gameotion): A Web Portal for Physics-conceptualized Game in terms of Aesthetic

Table 3 shows the Level of Acceptability of Gaming in Motion (Gameotion): A Web Portal for Physics-conceptualized Game in terms of Aesthetic where it can be referred to as the overall qualitative features of the concepts and consideration of visual or graphical experience. Aesthetic is the form of theoretical analysis of the form, expression, and symbolism in the work of art. In Gaming in Motion (Gameotion): A Web Portal for Physics Conceptualized Game, Aesthetic is one of the important aspects because it will dispense the research project to its potential users. With the design, learners can interpret how the Gameotion can be accessed. In addition, design helps the users to make a better impression of the product. In conclusion, the impact of a design really helps the users get attracted to utilizing the web portal. Overall, Gameotion has an attractive user interface and user-friendly display.

Table 3. Level of Acceptability of Gameotion in terms of Aesthetic

The Web Portal...	Teachers			Experts		
	Mean	SD	Remarks	Mean	SD	Remarks
1. Promotes a drive to answer the given learning task through interesting, attractive features.	4.75	0.49	Strongly Agree	4.38	0.63	Strongly Agree
2. Is visually attractive and has appropriate aural material.	4.68	0.53	Strongly Agree	4.55	0.60	Strongly Agree
3. Designs like font color, size, and style used in the game are suited for learners with color blindness or visual impairment.	4.70	0.52	Strongly Agree	4.65	0.48	Strongly Agree
4. Also provides appropriate representation and images.	4.75	0.49	Strongly Agree	4.60	0.63	Strongly Agree
5. Has a clarity in screen layout with no unnecessary distracting features	4.73	0.51	Strongly Agree	4.43	0.64	Strongly Agree
Overall Mean	4.72			4.52		
SD	0.50			0.60		
Verbal Interpretation	Very High			Very High		

As shown in Figure 4, the teachers observed that Gameotion promotes a drive to answer the given learning task through, interesting, attractive features. It also provides appropriate representation and images. As they yielded the highest mean score (M=4.75, SD=0.49) they were also both remarked as Strongly Agree. On the other hand, it has clarity in screen layout with no unnecessary distracting features. This gives a mean score (M=4.73, SD=0.51) and was also remarked as Strongly Agree. The Gameotion is also visually attractive and has appropriate aural material. Although it received the lowest mean score of responses with (M=4.68, SD=0.53) but still remarked as Strongly Agree.

The experts observed that the aesthetic of Gameotion like font color, size, and style that used in the game are suited for learners with color blindness or visual impairment. This rating got the highest mean score (M=4.65, SD=0.48) and was remarked as Strongly Agree. It also provides appropriate representation and images which gets a mean score (M=4.60, SD=0.63) and was also remarked as Strongly Agree. On the other hand, Gameotion promotes a drive to answer the given learning task through, interesting, attractive features. Although it received the lowest mean score of responses (M=4.38, SD=0.63) yet it was still remarked as Strongly Agree.

According to Islam, Lai-Kuan, & Chee-Onn (2019), aesthetic-driven images have started to receive considerable research interest. In recent years, the quality of an image composition has gradually improved, and the rise of high-quality imagery is growing continually. Hence, having a great aesthetic image attracts the users and helps them gain something out of the box.

Level of Acceptability of Gaming in Motion (Gameotion): A Web Portal for Physics-conceptualized Game in terms of Experience

Table 4 shows the level of acceptability of Gaming in Motion (Gameotion): A Physics Conceptualized Game in terms of Experience as a representation and understanding of a researcher or research subject's human experiences, choices, and options and how those factors influence one's perception of knowledge. In Gameotion, there is the same experience users can acquire because of the similarities of its features to another existing web portal. These experiences can be used as an advantage in managing and accessing the Gameotion web portal to familiarize every corner of the developed research project and to enhance their analyzing and technical skills in applying the learning material.

Table 4. Level of Acceptability of Gameotion in terms of Experience

<i>The Web Portal...</i>	TEACHERS			EXPERTS		
	MEAN	SD	REMARKS	MEAN	SD	REMARKS
1. Does not let me encounter any errors or drawbacks when accessing it in creating my account and managing my profile.	4.58	0.55	Strongly Agree	4.10	0.55	Agree
2. Can be utilized smoothly in making changes relevant to my account.	4.63	0.54	Strongly Agree	4.48	0.64	Strongly Agree
3. Makes learning more interactive and enjoyable due to its features like downloading certain educational games.	4.80	0.46	Strongly Agree	4.60	0.55	Strongly Agree
4. Will provide a suitable and user-oriented interface that could help the users for smoother operations.	4.73	0.51	Strongly Agree	4.55	0.55	Strongly Agree
5. Allows users to finish their tasks immediately and improve the workload performance.	4.70	0.56	Strongly Agree	4.45	0.71	Strongly Agree
Overall Mean		4.69			4.44	
SD		0.53			0.62	
Verbal Interpretation		Very High			Very High	

On Table 4, the teachers experienced that Gameotion makes learning more interactive and enjoyable due to its features like downloading certain educational games. This gives Gameotion the highest mean score (M=4.80, SD=0.46) and was remarked as Strongly Agree. It also provides a suitable and user-oriented interface that could help the users for smoother operations. Receiving a mean score (M=4.73, SD=0.51) it was also remarked as Strongly Agree. On the other hand, Gameotion did not let the teachers encounter any errors or drawbacks when accessing it in creating my account and managing their profile. Although it received the lowest mean score of responses with (M=4.58, SD=0.55) it was still remarked Strongly Agree.

As the experts observed, Gameotion has the experience that makes learning more interactive and enjoyable due to its features like downloading certain educational games. This yielded the highest mean score (M=4.60, SD=0.64) and was

remarked as Strongly Agree. Also, it provides a suitable and user-oriented interface that could help the users for other operations. With a mean score (M=4.55, SD=0.55) this was also remarked as Strongly Agree. On the other hand of Gameotion experience, experts didn't encounter any errors or drawbacks when accessing it in creating an account and managing a profile. Although it received the lowest mean score of responses with (M=4.10, SD=0.55) it was remarked as Agree by the expert's evaluation.

Plump & LaRosa (2017) explains how a popular e-learning tools helps the learners and educators create an engagement without doubt. It gives a better classroom environment with active learning experience. The real-time feedback provides opportunities for professors in various disciplines to tailor their instruction based on student understanding on quizzes.

Level of Acceptability of Gaming in Motion (Gameotion): A Web Portal for Physics-conceptualized Game in terms of Functionality

Table 5 shows the level of acceptability of Gaming in Motion (Gameotion): A Physics Conceptualized Game in terms of Functionality through several key factors that emerges from the research. Functionality is a perceived benefit within a tool that is related to various aspects of user-friendly interface, features, maintainability, reliability, information presentation and classification, and navigation. Also, it is the ability to perform a certain task or function. Gameotion web portal contains various functions needed to perform as a whole learning material for students, which also defines the overall operation as another learning tool inside a web portal.

Table 5. Level of Acceptability of Gameotion in terms of Functionality

The Web Portal...	Teachers			Experts		
	Mean	SD	Remarks	Mean	SD	Remarks
1. Serve as an educational tool for teachers and students.	4.80	0.52	Strongly Agree	4.53	0.51	Strongly Agree
2. Will greatly help the users in storing, viewing, and retrieving data.	4.75	0.54	Strongly Agree	4.38	0.81	Strongly Agree
3. Remains reliable to the existing and future users.	4.68	0.53	Strongly Agree	4.68	0.57	Strongly Agree
4. Can be functional on any device.	4.80	0.46	Strongly Agree	4.50	0.72	Strongly Agree
5. Will be the outline for the standard-setting of some schools that want to gain access to it.	4.70	0.52	Strongly Agree	4.55	0.50	Strongly Agree
Overall Mean	4.75			4.53		
SD	0.51			0.63		
Verbal Interpretation	Very High			Very High		

Table 5 illustrates the level of acceptability of Gaming in Motion (Gameotion): A Physics Conceptualized Game in terms of Functionality. The teachers' observation on the functionality of Gameotion states that it serves as an educational tool for educators and learners and can be functional on any device. These yielded the highest mean score (M=4.80, SD=0.52) and (M=4.80, SD=0.46) and were remarked as Strongly Agree. Also, the teachers see that Gameotion will be a great help to the users in storing, viewing, and retrieving data. With a mean score (M=4.75, SD=0.54) it was also remarked as Strongly Agree. On the other hand, it remains reliable to the existing and future users. Although it received the lowest mean score of responses with (M=4.68, SD=0.53) it was still remarked Strongly Agree.

On experts' observation, Gameotion remains reliable to the existing and future users. It yielded the highest mean score (M=4.68, SD=0.57) and was remarked as Strongly Agree. Likewise, Gameotion will be the outline for the standard-setting of some schools that want to gain access to it as they adapt with the new normal education. Scoring with a mean (M=4.55, SD=0.50) it also remarked as Strongly Agree. On the other hand, Gameotion can be a great help to the users in storing, viewing, and retrieving data. Although it received the lowest mean score of responses (M=4.38, SD=0.81) yet it was also remarked Strongly Agree. The level of acceptability of Gaming in Motion (Gameotion): A Physics Conceptualized Game in terms of Functionality as per experts' point of view attained a mean score of 4.53 and a standard deviation of 0.63 and was Very High among the respondents.

Yang & Lu (2021) emphasizes the appropriateness and functionality of using digital game-based learning materials. This paper stated how each party benefits from using this newer educational method rather than sticking to the traditional classroom setting. Furthermore, incorporating two-tier testing into digital games can effectively reduce anxiety and help learners learn well. This was correlated to the developing project entitled Gameotion that has a purpose of educating the learners while entertaining. This study proves that with game-based learning approach, students may still learn while playing.

Overall Level of Acceptability of the Gaming in Motion (Gameotion): A Web Portal for Physics-Conceptualized Game.

The following data presents the overall acceptability of Gameotion among respondents. This represents how the group of respondents accept the Gameotion as a educational materials that promotes engagement of students in answering their learning task. The table shows the mean, standard deviation, and Verbal Interpretation.

Table 6. Overall Level of Acceptability of the Gaming in Motion (Gameotion): A Web Portal for Physics-Conceptualized Game.

Indicator	Respondent	Mean	SD	Verbal Interpretation
Content	Teacher	4.695	0.52	Very High
	Expert	4.570	0.60	Very High
Accessibility	Teacher	4.675	0.52	Very High
	Expert	4.395	0.67	Very High
Aesthetic	Teacher	4.720	0.50	Very High
	Expert	5.520	0.60	Very High
Experience	Teacher	4.680	0.53	Very High
	Expert	4.435	0.62	Very High
Functionality	Teacher	4.745	0.50	Very High
	Expert	4.525	0.63	Very High

Conceptualized Game has been summarized and collected in a single table. The total scores for each representative have been identified, and the results show the effectiveness and being functional as another learning material for students, especially in Physics. With the significant numbers on the mean score and the standard deviation, all scores were labeled with a Very High in their Verbal Interpretation.

This proves that Gaming in Motion (Gameotion) is a great product and can become greater after its implementation. Gotch & Roberts (2018) stated that the overall score determines the combined perspective of each user who participated in any crowd activities, such as surveys, online forums, elections, and much more. However, this may not be the actual and favorable result, but it may serve as a guide for others to know how and why a particular item or idea is useful, functional, flop, or useless.

Overall, the result shows how each identifier reflects on the actual project. This proves that the current research project will also be significant as learning material. Even though this is still not implemented today, it will eventually contribute to the educational system.

Significant Difference in the Acceptability of the Gameotion

The table shows the result of significant difference in acceptability of Gameotion between Teachers and Experts. The data presents the mean, t-statistic, critical t-value, p-value, and analysis.

Table 7. Significant Difference in the Respondents’ Ratings on the Acceptability of the Gameotion

	Mean	t statistic	Critical value	t p-value	Analysis
Content					
Teachers	4.695	1.245	2.023	0.221	Not Significant
Experts	4.570				
Accessibility					
Teachers	4.675	2.552	2.023	0.015	Significant
Experts	4.395				
Aesthetic					
Teachers	4.720	2.026	2.023	0.049	Significant
Experts	4.520				
Experience					
Teachers	4.685	2.555	2.023	0.015	Significant
Experts	4.435				
Functionality					
Teachers	4.745	1.972	2.023	0.056	Not Significant
Experts	4.525				

Table 8 presents the significant difference in the acceptability of the Gaming in Motion (Gameotion): A Web Portal for Physics-Conceptualized Game of IT Experts, Master Teachers, and Teachers. There is no observed significant difference between the Teachers' and Experts' perceptions of acceptability in terms of Content and Functionality, as evidenced by the t statistics. The statistics were within the non-rejection region, signified by the critical value of 2.023. The computed p-values, greater than the significance alpha 0.05, imply the absence of signs of the tests.

This means that the level of evaluation made by teachers & experts in terms of Content and Functionality is almost the same. The criteria set by the researcher on the variable satisfy the evaluator with the same evaluation level.

On the other hand, there is an observed significant difference between the Teachers' and Experts' perceptions of acceptability in terms of Accessibility, Aesthetic, and Experience, as evidenced by the t statistics. The statistics are within the rejection region, signified by the critical value of 2.023. The computed p-values of 0.015, 0.049, and 0.015, respectively, which are less than the significance alpha 0.05, imply the test's significance.

From the findings above, it can be inferred that at a 0.05 level of significance, the null hypothesis “There is no significant difference in the acceptability of Gaming in Motion (Gameotion): A Web Portal for Physics-Conceptualized Game of IT Experts, Master Teachers, and Teachers” is partially rejected. This is because the analysis came from the indicators Content and Functionality was “Not Significant” while the findings in the indicators Accessibility, Aesthetic, and Experience are “Significant.”

According to Kanwar & Sanjeeva (2022), survey boosters' judgment implies how effective the survey was. It is also found that most people believe in a survey because they know how accurate the results of the survey are.

The study of Ninaus (2022) resulted the effectiveness of the game-based learning in improving students' learning in Mathematics. Students' quality of playing experience was predicted by measures of acceptance of game-based learning and intrinsic motivation for math. These indicated that the learning success of in game-based learning approaches is driven by students' acceptance of the game as a learning tool.

In addition, Azeta, Oyelami, & Ayo (2018) stated to boost the ideas on the advantages of using e-learning web portals to achieve the significant goal of learning. They found that it is now becoming the best alternative to cope with the current situation of some students studying schools or institutions. With the help of e-learning web portals, they make sure that education will continue despite progressing outside of its bubble.

4. CONCLUSION AND RECOMMENDATION

4.1 Conclusions

Based on the results of the tests and surveys conducted, the researcher is hoping that the web portal might be a great help in motivating and engaging the students in accomplishing the task. There is no significant difference in the result of the survey conducted in the group of respondents in terms of Content and Functionality. However, on the other hand, when it comes to Aesthetic, Accessibility, and experience, there is a significant difference in the perspective of the respondents. Thus, the null hypothesis is partially rejected. This is because the analysis came from the indicators, Content and Functionality was resulted as "Not Significant" while the findings in the indicators Accessibility, Aesthetic and Experience is "Significant." It entails that the web portal is accepted as a great educational tool but there is a need of further revisiting of web portal in the design and accessibility.

4.2 Recommendations

Based on the given findings and conclusions, the following recommendations are told and advised:

1. Gameotion Web Portal is recommended for Science Teacher as an additional learning material in teaching General Physics 1 to engage students in answering their task.
2. Teachers are recommended for a webinar regarding the use of Gameotion Web portal in teaching to know and learn how to put practice and manipulate the Web portal.
3. Future researchers suggested to ask for the approval of the Learning Resource Management and Development System to allow more schools, teachers, and learners to use the Gameotion Web Portal. If this Gameotion will be acquired or fully implemented, it can be bought by any organization to continue its utilization as an educational material and be labelled under their name through series of legal processes in transferring the product. If this so, many students will experience and engage in learning through this new developed learning materials.
4. It is suggested for future researcher to have a consultation and help of IT experts or Web developers to enhance its feature, especially its accessibility and aesthetic.

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