

Analysis on Types of Mobile Games Played among the IHL Students in Malaysia

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Abstract: - The emerging of mobile games invites many researchers from all around the world to continue the studies related to this field. As in many countries especially Japan and Korea, mobile game is getting more attention from digital gamers as one of the most preferable type of digital games. One good reason that contributes to the success of mobile game is because of its mobility, which means gamers can play games at anytime and anywhere they wish for. In this paper, we examine the usage of mobile game compared to other type of digital game such as console or arcade game in Malaysia. We also perform a series of analysis regarding to student preferences in every situation before a paradigm shifts from console or arcade game to mobile game. A survey on user preferences among students of Institute of Higher Learning (IHL) has been done to gather useful information and relevant data to support this paper. The survey showed that an overwhelming majority (60%) of the respondents prefer to play games in mobile phone. The data that have been gathered from the survey were analyzed using Statistical Package for Social Science (SPSS), Release 13.0.0, to investigate the number and percentage of students that use mobile game.

Key-Words: - Mobile game, mobile learning, mobile phone, programming

1 Introduction

A growing body of research [1] indicates that mobile technologies can be an effective tool in catering for students in a digital age and there are signs of the motivating potential and possible learning gains of games played on mobile devices with young adult audiences. The market for mobile games is an important growth area for the games industry. There are estimated to be 1.5 billion mobile phones in the world today [2]. This is more than three times the number of personal computers (PCs), and today's most sophisticated phones have the processing power of mid-1990s PC. The market for mobile games is an important growth area for the games industry. The market is predicted to grow rapidly with the convergence of mobile technologies and as mobile applications become less constrained by device limitation. Last generation of mobile devices presents higher definition color screen, enhanced memory and many more functionality, and making mobile gaming more appealing, considering also that development costs are lower for mobile games than for games on traditional platforms. Furthermore, most of new phones now include some games, and all but the cheapest models

offer downloading additional games. There are large numbers of games available on the market to be purchased and downloaded for only few Ringgit Malaysia (RM) each. Mobile phones companies are competing with each others in providing the latest and most sophisticated mobile phone models to users. With the increasing number of mobile phone models, the number of mobile games is also getting higher. The ultimate example is the Nokia N-Gage QD game deck, which is primarily a portable games machine but can also be used as a phone.

Therefore, with the sophistication and affordability of mobile technologies and applications, it also gives a good impact on the educational area. Mobile phone is getting popular for the role as a new learning tool which is known as the m-Learning (Mobile Learning). However in seeking to cater for the learning needs of young audiences, who in general have high relation to mobile technologies, merely trying to adapt e-learning approaches for use with mobile technologies will not be sufficient. Young adults in particular need m-learning opportunities that are not only cognitively accessible but that also engage them in affective learning.

2 Survey Methodology

The data for this paper come mainly from a survey conducted in Jun 2006 at University Malaya (UM). A survey was formulated to include question on the use of mobile phone among student IHL. In this study both quantitative and qualitative data were collected. The survey has been done based on interviews with 129 students by questionnaires. They were asked several questions in order to answer this research question:

- Is the student like to play more than one type of mobile game?

2.1 Survey Method

Before questionnaires were distributed to the target respondents, a systematic checking or prior test of a questionnaires was carried out. The purpose of prior test is to ensure that the questions are clear and arranged in logical order so that the respondents are able to answer them without difficulty [3]. The test concentrates on the ease with which the questions flow, the word chosen in the questionnaires, the appropriateness of the number of questions and the issues presented in the questionnaire. The modified questionnaires were then handed over to UM students.

3 Survey Outcomes

In this section, we present some of the most significant findings of the study, which lead to a more substantial discussion of our observations in the subsections. The discussion is all about defining correlation between students those playing mobile game and students who not prefer playing mobile game at all.

Correlation is one of the most common forms of data analysis because it can provide an analysis that stands on its own, and also because it underlies many other analyses. Correlations measure the linear relationship between two variables. The correlation table displays Pearson correlation coefficients, significance values and the number of cases with non-missing values (N). A correlation coefficient has a value ranging from -1 (a perfect negative relationship) to +1 (a perfect positive relationship). A value of 0 indicates no linear relationship. A correlation coefficient of 1 describes a perfect relationship in which every change of +1 in one variable is associated with a change of +1 in the other variable. A correlation of -1 describes a perfect relationship in which every change of +1 in one variable

is associated with a change of -1 in the other variable. A correlation of 0 describes a situation in which a change in one variable is not associated with any particular change in the other variable.

In other words, knowing the value of one of the variables gives you no information about the value of the other.

The significance of each correlation coefficient is also displayed in the correlation table. The significance level (or p-value) is the probability obtaining results as extreme as the one observed. If the significance level is very small (less than 0.05) then the correlation is significant and the two variables are linearly related. If the significance level is relatively large (for example 0.50) then the correlation is not significant and the two variables are not linearly related.

3.1 Students Preferences on Playing Mobile Game

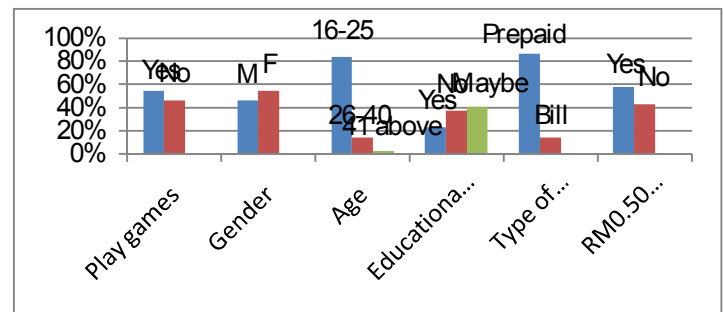


Table 3.1 General survey result

Table 3.1 shows the percentage of students those playing mobile game. A percentage is classified into play games, gender, age, educational games, type of payment and RM0.50 cost of download. The survey investigate that 54 percent are willing to play game on mobile phone. From the histogram, it is found that 54 percent out of 129 respondents are female willingness playing mobile game whereas the rest are male which is about 59 respondents. Although game is synonym with male, the histogram proofs that female leads in playing mobile game as well.

This survey is distributed to the target respondents with different range of ages. The students that among the age of 16-25, who are from Certification, Diploma and Degree education background, students that among the age of 26-40 are from Masters education background and ages from 41 above is among PhD and higher students shows that the older students has the passionate to play game are decrease. Here we may conclude that the higher education background the students have and

the older are, they are not willingly to play an educational game.

As indicated from the result, most of the respondents both male and female choose to download game using their mobile phone although most of them are using prepaid rather than bill. The result seems to

correspondent to the respondent's gender. Most of respondents choose to download game via mobile phone as it is cheaper and easier to download.

		Play Mobile Game (yes)	Strategic Thinking	Hand Faster Skill	Eye Focus Skill	Edutainment	Strategy/War gaming
Play Mobile Game (yes)	Pearson Correlation	1	.023	.137	.156	.070	.050
	Sig. (2-tailed)		.850	.266	.203	.568	.686
	N	129	68	68	68	68	68
Strategic Thinking	Pearson Correlation	.023	1	-.253(*)	.066	-.096	-.091
	Sig. (2-tailed)		.850	.038	.594	.435	.459
	N	68	68	68	68	68	68
Hand Faster Skill	Pearson Correlation	.137	-.253(*)	1	-.004	-.096	-.289(*)
	Sig. (2-tailed)		.266	.038	.973	.435	.017
	N	68	68	68	68	68	68
Eye Focus Skill	Pearson Correlation	.156	.066	-.004	1	.009	-.036
	Sig. (2-tailed)		.203	.594	.973	.944	.768
	N	68	68	68	68	68	68
Edutainment	Pearson Correlation	.070	-.096	-.096	.009	1	-.156
	Sig. (2-tailed)		.568	.435	.435	.944	.205
	N	68	68	68	68	68	68
Strategy/War gaming	Pearson Correlation	.050	-.091	-.289(*)	-.036	-.156	1
	Sig. (2-tailed)		.686	.459	.017	.768	.205
	N	68	68	68	68	68	68

*Correlation is significant at the 0.05 level (2-tailed).

Table 3.2. Correlation between Students Preferred Mobile Games

a. Relationship between Play Mobile Games and the Types of Mobile Games

From Table 3.2, it shows that only 68 respondents play mobile games from its total respondent which is 129. There are five main types that had been asked which are strategic thinking, hand faster skill, eye focus skill, edutainment, and war gaming. Among them, eye focus skill type is the most students played. Games that fall under this type are, for example, Snake, Skill Ball Lingo, and Worms'07.

b. Relationship between Strategic Thinking Type of Game and Other Types of Game

From the table, the relationship between students who play hand faster skill type of game and strategic thinking type of game is not significant and acceptable. This is because it is less than 0.05. Most students who do not play strategic thinking type of game do not play edutainment and war gaming type of game as well. The significant of both relationships are more than 0.4. However, students who play the strategic thinking type of game are also play eye focus skill type of game. The correlation is far from 1 which is 0.066 only. This relationship is confirmed by its significant is more than 0.05. These two types of games need different skill; thinking and physical movement.

c. Relationship between Hand Faster Skill Type of Game and Other Types of Game

From b., relationship between strategic thinking type of game and hand faster game is not acceptable. The correlation between hand faster skill type of game and eye focus skill, edutainment, and war gaming type of game is negative. It means any students who do not play hand faster skill type of game will not play other game as well. Hand faster skill type of game is one of basics type players play before playing other games. Basically, the players do not have to think much but just concentrate on their hand or fingers movement to do any reaction.

d. Relationship between Eye Focus Skill Type of Game and Other Types of Game

The correlation between eye focus skill type of game and strategic thinking and edutainment type of game is positive. Students who prefer to play eye focus skill type of game will prefer both games too. The significant of

both relationships is more than 0.5, which means they are strong.

e. Relationship between Edutainment Type of Game and Other Types of Game

The relationship between edutainment type of game and eye focus skill type of game is positive. The relationship with the other games is negative. It is obvious that whoever does not play edutainment type of game will not like to play strategic thinking and war gaming type of game as well. These three games need player to think and some knowledge to manipulate in order to win the game. However, students who like eye focus skill type of game like to play edutainment type of game too with the correlation of 0.009 only (small number of students).

f. Relationship between War Gaming Type of Game and Other Types of Game

The correlation between war gaming type of game and hand faster kill type of game is negative with significant is less than 0.05. As a result, the relationship is unacceptable. The other relationships are negative. Therefore, it can be conclude that students who so not play war gaming type of game will not play strategic thinking, eye focus skill, and edutainment type of game too.

g. Analysis of the Relationships

There are five types of mobile games have been analysed their relationship by using Pearson Correlation. They are strategic thinking, hand faster skill, eye focus skill, edutainment, and war gaming. Two relationships are not acceptable which are 1) strategic thinking and hand faster skill and 2) war gaming and hand faster skill. Only two relationships have positive correlation. The first relationship is between strategic thinking and eye focus skill. Its correlation is only 0.066 which is far from 1. This means not many students prefer both games at the same time. The second relationship is between eye focus skill and edutainment. Both games do not need much physical reaction. Therefore students who prefer these types of game are prefer brain challenging games. There are two other relationships that have negative correlation for all relationships which are hand faster skill and war gaming. Students who do not like hand faster skill will not like other four games as well. Same conclusion goes to war gaming correlation. Students

who do not prefer to play war gaming will not like to play any of other types of game.

3.2 Student without Preferences to Play Mobile Game

a. Relationship towards Gender

		Play Mobile Game (no)	Gender
Play Mobile Game (no)	Pearson Correlation	1	-.009
	Sig. (2-tailed)		.922
	N	129	129
Gender	Pearson Correlation	-.009	1
	Sig. (2-tailed)	.922	
	N	129	129

Table 3.6 Correlation between Student who is not Preferred Playing Mobile Game and Gender

Table 3.6 shows a correlation between students who are not preferred to play mobile game and gender. Non-playing mobile game and gender does not have a significant linear relationship. A Pearson correlation in this table shows that is negative. The Person Correlation Coefficient $-.009$ is not significantly different from zero, as indicated by the significant level of $.992$. Therefore, the less gender has shows the less students playing mobile game.

b. Relationship towards Age

		Play game (no)	Age
Play game (no)	Pearson Correlation	1	.130
	Sig. (2-tailed)		.143
	N	129	129
Age	Pearson Correlation	.130	1
	Sig. (2-tailed)	.143	
	N	129	129

Table 3.7 Correlation between Student who is not Preferred Playing Mobile Game and Age

Table 3.7 gives us a correlation matrix for the three correlations requested in the above dialog box. A Pearson correlation coefficient shows that it is a positive

relation between students who is not preferred playing game and their age. This correlation coefficient is $.130$. The significance level is relatively large ($.143$) then the correlation is not significant and the two variables are not linearly related. This tells us that the older the students are, the passionate to play game is decreasing.

c. Relationship towards Degree of Education

		Play game (no)	Degree of education
Play game (no)	Pearson Correlation	1	-.093
	Sig. (2-tailed)		.296
	N	129	129
Degree of education	Pearson Correlation	-.093	1
	Sig. (2-tailed)	.296	
	N	129	129

Table 3.8 Correlation between Student who is not Preferred Playing Mobile Game and Degree of Education

Table 3.8 shows a correlation matrix for the three correlations requested in the above dialog box. A Pearson correlation coefficient shows that is negative relation between students who is not preferred playing game and their age. This correlation coefficient is $-.093$. The significance level is relatively large ($.296$) then the correlation is not significant and the two variables are not linearly related. This tells us those students who have a higher background of education are unwilling to playing game. In other word, the high degree of education, their willingness to play game is decrease.

4.0 CONCLUSION

In this paper, a survey on mobile games usage among the IHL students was conducted. The rationale for conducting this survey was based on the rapidly growing of mobile phone usage especially among IHL students. The survey investigate that 54 % out of 129 students are willing to play game on mobile phone. The discussion is all about defining correlation between students those playing mobile game and students who do not prefer playing mobile game at all. There are a few relationships that have been investigated in this survey.

The relationship towards favorite games shows that the more student playing mobile games, more Hand Faster Skill game is chosen. The other relationship

indicates that the more gender preferences on playing mobile games, the more games will be downloaded via SMS but the relationship between study's sponsorship will decrease. In fact, mobile game seems likely to replace most of other game platforms such as console and arcade. The paradigm shifts from conventional game platforms to handheld would be depending on the portability of the platform and time consuming. Students prefer to play mobile game on a bus, car, train or it could be in lecture rooms while waiting for lecture to begin. This survey shows that the interest of playing mobile game is decreased when these three scenarios occur: (1) the value of gender is decreased (2) the age of the player is increased (3) the level of the player's education is increased.

Future studies should be taken into students' preferences consideration across mobile learning. For examples, the type of learning should be converted into mobile platform and also the effect of mobile learning for students. Of course, this needs to be supported by further evidence.

5.0 ACKNOWLEDGMENT

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