

Online Games and Thai Youth Case Studies of Impact

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Abstract: This study reports on studies of online gaming among Thai youth from the primary to the post secondary levels. The studies focused on youths gaming behaviors, ethical reasoning and impact on playing online games. Methods involved studying clusters of various participants in Thailand. Tools were questionnaires, online games and tests of ethical reasoning as well as observation.

Key words: Online game, Thai youth, positive impact, negative impact, education setting, ethics impact

INTRODUCTION

Online games have become one of the favorite activities of children (Gentile *et al.*, 2004; Hongsangounsri and Ketman, 2006). The increasing exposure of children and adolescents to electronic media is occurring in Thailand and all over the world (Jaruratanasirikul *et al.*, 2009; Ozcinar, 2011). Access to online games is made easier the prevalence of internet cafes specializing in online game. More than 1 million Thai children and teenagers are addicted to online games. The study on Thai children and adolescents in Southern Thailand (Jaruratanasirikul *et al.*, 2009) found that Thai children and adolescents played electronic games on an average 3 h a week. A survey by Viriyavejakul (2008) on recreational gaming behavior of undergraduate students in Thailand revealed that students played computer games on average 7-15 times a month 1-2 h each time. Most often, they played at home whereas 31% of them played games in internet cafes.

Various games can be found easily in the market such as action and adventure game, card game, strategy games, sport games, shooting game, puzzle game, etc.

Popular games among children at present are online games. It consists of the strategies which several players have with precise rules for order in which players choose the strategies the information they have when they choose and how they rate the desirability of resulting outcome (Camerer, 2003).

In Thailand, youth addiction to video game playing has been recognized by government as a problem. After a 12 years old, boy committed suicide over a game ban by his father the Thai government closed dozens of websites (Bangkok Post, 2009).

The Thai government banned some video games, such as "Hitman", "Killer Seven".

The government is considering imposing a curfew for online game shops. Gaming is not only a problem in Thailand, it has been recognized as problematic around the world (Sherry, 2001; Anderson and Bushman, 2001; Anderson, 2004).

Games have various types of forms available for players of all ages (Walsh, 2000), such as puzzles, simulation, sport, action adventure, shooting, role playing and strategy games (Liu and Lin, 2009). Game design has made great progress in human-computer interaction (Cai, 2009). One principle of designing game is to have fun. Games present pictures, sound, color and activities. They provide experiences, such as putting the player in his/her dreams. Some games are based on a story some are puzzles.

Games are designed so that the content and form of losing and winning make it difficult to stop playing. More than a million, Thai children spend time in front of the computer screen several hours each day without doing other activities (Jaruratanasirikul *et al.*, 2009).

Playing games will stimulate the desire part of the brain cell. If children are not trained or taught to exercise the thinking part of controlling then the desire part will have more influence than the thinking part and cause game addiction without playing this will trigger the craving symptom (Hasithavech, 2003). Some studies (Van Schie and Wiegman, 1997; Walsh, 2000) have shown a negative association between amount of video game play and school performance for children.

Davis (2001) pointed out that the charm of playing games particularly online game makes children addicted because of their role of actors as in another real world making people interact. Game addiction may result in challenges in thinking which may lead children to be isolated and feel lonely (Hasithavech, 2003; David *et al.*, 2002). Anderson and Bushman (2001)'s study on meta

analytic found that violent video games increased aggressive behavior and decreased pro-social behaviors in children and young adults. Pritiprasong *et al.* (2003) found that the problem of game addiction is likely to increase and aggravate in Thailand.

Among the negative alleged effects of playing game, we cannot avoid playing games (Sherry, 2001; Anderson and Bushman, 2001). Thailand is a very good context in which to study the impact of gaming for negative and positive reasons because of the prevalence of gaming in this country.

In general, the impacts of playing games were identified as negative especially in relation to social effects. Only a few studies have emphasized the positive effects (Thirunaryanan *et al.*, 2010). Gee (2003) and Prensky (2001, 2003) advocated using video games in educational settings. Owe to the information which has studied in Thailand, it did not cover all effects of playing game, such as on ethics.

This study reports on three studies of gaming to identify some of the complex effects that gaming has on youth. Study 1 to identify the frequency and period of playing games. Study 2 to study the impact of playing online games on physical and mental health. Study 3 to evaluate how playing games impact students ethics.

Studies 1 and 2 relied on surveys to identify how the youth (age 9-20 years) play online games (frequency and length of time playing games of playing game) and how the games affect the physical and mental health of the youth. Study 3 involved an experimental study to identify how games can have positive effects on ethical behaviors responsibility, economical behavior, loyalty and generosity.

MATERIALS AND METHODS

From the aim of this research, researchers set three case studies involved to these aims.

Study 1 and 2: A questionnaire was developed to ask about the behavior and impacts of playing games online. It was composed of two main parts:

- The behavior of playing game, such as the frequency to play, period of playing, experience of playing, etc.
- The symptoms after playing on physical and emotional impacts

Participants came from four provinces: Bangkok, Nongkai, Udorn Thane (North-Eastern part of Thailand) and Lopburi (vocational students from the central part of

Thailand). Study 1 was a survey of 1,340 students from primary school junior high school and vocational school. Study 2 was the survey of 740 students from primary and vocational students.

Study 3 was an experiment study for the case of 40 junior high school students. The online game "Thumdee" was developed according to theme of four ethics responsibility, economy, loyalty and generosity. The game was an adventure RPG game in the form of 2D side scrolling presented together with actors. Players, as the actor could control and participate in the progress level of game. Players received scores after attaining the target of their jobs in game which they could progress to a higher level. Observation of students' behavior was also carried out by the teacher to record and evaluate students behavior. It was about how students behaved daily life according to responsibility, economy, loyalty and generous ethics. The evaluation of this game on page design, sound, contents and attractiveness were in high to very high quality.

The participant played game for 2-3 h a week at school. They can also play any other place. This experiment was 3 months long.

The observation form was developed. It composed of students' responsibility, such as paying attention in classes, doing the assignment and coming to class regularly were observed. Students' behaviors of loyalty such as telling the truth, being on time and following the regulation were observed. Students' behaviors of economical ethics, such as spending saving using according to its value and considerate to self. The behaviors of generosity such as giving, helping others, listening to others' problem and contributing school activity. Teacher observed students' behavior as well as students also reported their behavior according to these four aspects.

A test was developed to elicit students' ethics. Its content covers four dimensions of scope of the study according to Koburgh's principle which was checked by experts for content validity and tried out for reliability and objectivity. It was found that test reliability were 0.87.

RESULTS

Study 1 to identify the frequency and period of playing games. Several groups of students were asked about their behaviors of playing games as in Table 1. Two thirds of vocational students played <3 days, they played once a day. Almost all of them played >30 min each time. The data was shown as percentages. Whereas, 64.2% of

junior high school and 51.6% of primary school played <3 days a week, most of primary students played >30 min each.

To study the impact of playing online games on physical and mental health students in the North-Eastern region of Thailand and vocational students in Lopburi (the central part of Thailand) were asked if any physical symptom occurred after playing game online. A questionnaire with a rating scale was used to elicit these data. The results on physical and emotional impacts are shown in Table 2.

The participants grade 7-9 students in the North-Eastern of Thailand reported average symptoms after playing game between 1.67-2.23. The first-order symptom was lacking concentration then pain in the occipital bone back or shoulders and drowsiness or dizziness feeling edgy or annoyed experiencing migraine or having a headache, respectively. The last order of symptoms was avoidance of social contact. The symptom was not critical however, it effected the youth. For vocational students, the average of all effects ranged from 1.88-2.34. In this study, the highest effect of playing games was feeling drowsiness or dizziness ($\bar{x} = 2.34$). Insomnia annoyance

pain in the occipital bone or back or shoulders, lack of concentration, having annoyance and migraine or having brow ache, being exhausted tense, unable to do any activities, heart palpitations ($\bar{x} = 2.31, 2.27, 2.26, 2.22, 2.19, 2.08, 2.01, 1.93$ and 1.88 , respectively). The lowest effect is the avoidance of social contact which was same as what grade 7-9 students reported.

When period of playing was concerned (<30 min, 30-120 min and >120 min), it was found that for some symptoms the longer students played the more symptoms they experienced, such as unable to do activities ($\bar{x} = 1.78, 1.95, 2.19$) confused mind and strain ($\bar{x} = 1.92, 2.01$ and 2.21), being exhausted ($\bar{x} = 1.95, 2.06$ and 2.15) and heart palpitations ($\bar{x} = 1.69, 1.89, 2.15$ and 2.15 , respectively). Other symptoms showed no trend suggesting a need for further study.

To evaluate how playing games impact students' ethics forty secondary school students in grade 7-9 were asked to join the experiment of playing RPG created online game focus on responsibility, economical ethics, loyalty and generosity for 3 months (200 h). Players as the actor had to do some activities which provided them scores, according to their good behavior. The students' behaviors related to responsibility, economical behavior, loyalty and generosity were observed by the teacher. Students were also asked to do self report for behavior related to these ethics in several items. Teacher's assessment and students self report as in Table 3.

Table 3 revealed that students self report scores before between and after the experiment were progress in every aspect. For the beginning students assessed themselves in average level for three of four aspects ($\bar{x} = 3.34-3.53$) where as all aspects are evaluated in high level at the end of the experiment ($\bar{x} = 4.34-4.49$). The teachers assessed their students lower than students' self report, however it was coincident with the students. At the end of the experiment, mean score of players behavior of all aspects increased to high level ($\bar{x} = 4.14-4.37$).

The study on students' ethics reasoning. Tests of ethical reasoning on aspects of responsibility, economical ethics, loyalty and generosity were created according to Kobourgh's principle and were tried out to find out for their

Table 1: Students frequency and period of playing online games

Issues	Vocational students	Junior high school students (Grade 7-9) (%)	Primary school students (Grade 4-6) (%)
Frequency (for week)			
<3 days	67.9	64.2	51.6
>3 days	32.1	35.8	48.3
Frequency (per day)			
Once	60.0	N/A	N/A
2-5	31.2	N/A	N/A
>5	8.8	N/A	N/A
Playing (Time length)			
<30 min	19.1	N/A	23.35
30 min-2 h	42.6	N/A	30.00
2-4 h	27.1	N/A	33.30
>4 h	11.2	N/A	13.35

Table 2: Physical and emotional impacts of playing game on junior high school and vocational students

Symptoms	Junior high school		Vocational	
	\bar{x}	SD	\bar{x}	SD
Insomnia	1.96	1.08	2.31	1.14
Feeling edgy or annoyed	2.18	1.11	2.27	1.12
Unable to do much activities because of nervous tension	1.78	0.98	2.06	1.12
Feeling serious tense	1.92	1.04	2.01	1.09
Avoiding social contact	1.67	0.99	1.88	1.12
Experiencing mig raine or having a headache	2.06	1.21	2.19	1.13
Lacking concentration	2.23	1.15	2.22	1.11
Being exhausted	1.96	1.06	2.08	1.08
Feeling heart palpitations	1.72	0.99	1.93	1.07
Experiencing pain in the occipital bone, back or shoulders	2.19	1.23	2.26	1.16
Feeling drowsiness or dizziness	2.19	1.22	2.34	1.21

Table 3: Mean score of teacher assessment and students self report for students ethics

Type of ethics	Before		Between		After	
	\bar{x}_s	\bar{x}_t	\bar{x}_s	\bar{x}_t	\bar{x}_s	\bar{x}_t
Responsibility	3.43	3.03	3.82	3.76	4.42	4.24
Economical behavior	3.53	3.20	3.84	3.76	4.37	4.30
Loyalty	3.34	2.92	3.80	3.44	4.34	4.37
Generosity	3.46	2.80	3.96	3.65	4.49	4.14

\bar{x}_s = Students mean score, \bar{x}_t = Teacher mean score

Table 4: Mean and standard deviation score of students reasoning of before and after the experiment

Type of ethics	Before		After		t-test
	\bar{x}	SD	\bar{x}	SD	
Responsibility	3.58	0.55	4.12	0.36	8.92*
Economical behavior	3.32	0.40	4.02	0.32	10.845*
Loyalty	3.31	0.59	3.96	0.38	9.41*
Generosity	3.02	0.52	3.87	0.36	14.13*
Total	3.31	0.40	3.97	0.28	16.30**

*p<0.01

quality. Their alpha coefficient was 0.87. The reasoning score were compared before and after the experiment by t-test as in Table 4.

The mean score of students before the experiment on economical behavior, loyalty and generosity were at the average level.

Only the mean score of responsibility on pre-test was in high level. However on the post-test score, their mean scores of all aspects were in high level. The t-test value was significant differently at alpha 0.01.

DISCUSSION

The study of students' playing game found that almost all participants played >30 min each time whereas 67.9% of vocational students, 64.2% of junior high school students and 51.6% of primary school students played <3 days a week. Most of vocational and primary students played >30 min each times. As Cummings and Vandewater (2007) reported the average time that gamers played was for a hour on the weekday and an hour and a half on the weekend.

The effect of playing online games on physical and mental health in students in junior high school and vocational level on each symptom was somewhat at a lower level (\bar{x} = 1.67-2.23). The first-order symptom was lacking concentration then pain in the occipital bone back or shoulders. These showed negative effects on players. Researchers found that period of playing related to the effect the longer the participants played game the more effect they obtained.

The experiment on playing the developed RPG game was the evident which impacted of content integrated in game. This game provided some ethics concept. The presentation of the game style attracted them. For the game design, players had to take role of the actor. To get the score, they had to do good activities. At the end of the experiment the students' self assessment scores on their behavior and also the teachers' rating score for the students' performance improved continuously. Students' reasoning score before and after the experiments were significant differently which coincides with their behavior rating score. This result might be the positive evident of



Fig. 1: Cover of developed game

playing this created game. Playing games allowed them to repeat good behavior over and over as they played in order to get a higher score rewards increase learning (Gentile and Anderson, 2003). Liu and Lin (2009) reported that student learning can be improved by designing such educational computer games appropriately. Games might provide good performance if the content provided pro-behavior as in this study.

The studies might provide evidence of some positive impacts of playing game and could be a strategy for students to learn ethics or some skills if we set the targets well then develop game according to the targets. Players had to do some preferable behavior, such as giving and helping while they learn these habits by imitating the role of the actor to create good habits. By imitating players can adapt themselves to individual learner and train players in a way that help them transfer knowledge or skills and social behavior to the real world (Gentile, 2009; Ducheneant and Moore, 2004).

Figure 1-4 showed how game "Thumdee" designed to attract players. It aroused positive behavior such as responsibility and economical behavior. As Gee (2003) explained that players learn and practice skill as accomplishing things they need and want to accomplish the goals.

It is necessary to make good games available for children and adolescents. Game developers should be concerned not only with excitement, entertainment and emotion but also for other aspects to learn. Government should make policies to promote games which provide preferred behaviors such as ban some games which provided strong negative impacts to children, concerned more about types of games especially educational game with appropriated and suitable content (Liu and Lin, 2009). Teachers could also integrate computer games into their teaching process or promote or create good and suitable content in game to learn.



Fig. 2: Developed game online



Fig. 3: Activity for economical behavior



Fig. 4: Activity for responsibility

Teachers can train children to control themselves and time to play to have self-discipline so that playing games may cause benefits as well. Parents should concern and manage the program for the children. They may supervise and play games with their children in order to create good relationship with them. By this way, parents should know types of game in order to guide them well. Then choose suitable game. In some occasions, the limitation or controlling violent game is necessary, however they can propose alternative choices or activities for them. Thus, playing game can be benefit.

CONCLUSION

Findings revealed some physical or emotional impacts of playing online game. A case study of ethical behaviors on playing the designed GRP game revealed that the average score of students ethical behaviors improved continuously. For positive impact, this study will be the evident for Thai government and parents to promote preferred game.

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