

Survey on How Norwegian Teenagers Play Video Games

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Abstract—This paper presents results from a survey among Norwegian teenagers with the goal to reveal how they play video games, how much they play, the game platform they prefer, how much time they spend on playing mobile games, and the game genres they prefer.

I. INTRODUCTION

Teenagers spend a lot of their time playing video games, which can be both positive [1] and negative [2]. Surveys are important to understand how video games are played, how much time is spent, and what platforms and genres are most popular. Surveys on how teenagers play video games are important as they represent typical power-users of games. The motivation for conducting this survey was to understand more about teenagers' habits of playing games and to look for differences in game habits in regards to gender and the time used on playing games. The results of the survey can be valuable input for developers that want to target teenagers as their primary users, and to see the different gaming patterns related to gender and time spent on playing games. Further, the results can be valuable when considering developing games for various platforms, including games for PC and console in contrast to mobile games. The results could also be useful for developing serious games targeted for teenagers, in terms of the amount of gameplay needed for a week, the platforms to deploy the games on, and the genres that would attract most users.

There have been published several studies on video games that covers areas such as how players experience shooter games [3], how people enjoys and benefits from playing games [4], video game play and preferences [5], gender differences in video game play, attitude towards pervasive games [6], and consequences of MMORPG game play [7].

The subjects in our survey were 103 Norwegian teenage students in the age between 14 and 16 years old that filled in a questionnaire about how they play games, the game platforms and their game preferences. The respondents were recruited through a booth at a science promotion event where over 2000 teenage students participated. 60 (58%) of the subjects were male and 43 (42%) females, and the subjects came from about 20 different schools from various town and cities around Trondheim in Norway. The subjects in the survey are categorized in three ways: 1) Gender, 2) how active they are as gamers, and 3) how active they are as mobile gamers. For gamers we have identified three classes according to how

much time the students spend on playing games: casual (0-5 hours per week), gamer (5-20 hours per week), and hardcore (20+ hours per week). There does not exist a hard definition on what a casual gamer, a gamer, or even a hardcore gamer is. Casual gamer must not be exchanged with the term casual game, which the International Game Developer's Association (IGDA) defines as games which are primarily distributed online. Casual gamers are persons that typically play short sessions of games over time, sporadic and do not immerse in one game for a long period of time. A gamer is more dedicated on playing games, and play games on a regular basis in addition to other hobbies. A hardcore gamer is typically a person that has gaming as the only hobby and spends a lot of time and long sessions on playing one or a few games. As teenagers usually not like to label themselves according to how they play games, we used the amount of time playing games to categorize them.

Similarly, we have identified three classes of mobile gamers: mCasual (0-1 hour per week), mGamer (1 – 2 hours per week), and mHardcore (more than 2 hours per week). As mobile games are generally played over short time intervals, mobile gamers area categorized differently.

II. THE RESULTS

A. Playtime

The first part of the survey focuses on how much time the subjects regularly spend on playing video games and the results are shown in TABLE 1.

TABLE 1 Time spent on playing video games per week

Time	0-1h	1-5h	5-10h	10-20h	20h+
All	31%	35%	13%	14%	7%
Female	67%	28%	0%	5%	0%
Male	8%	37%	23%	20%	12%

The table shows that most teenagers (66%) in our survey spend between 0 and 5 hours on playing games, 27% spend between 5 and 20 hours and 7% spend more than 20 hours per week. There is a very strong bias that male teenagers spend much more time than females on playing games. The average female player spend up to one hour playing games per week compared to between 5 and 10 hours for an average male player. Note also that in our survey, none of the female respondents said that they played more than 20 hours per week compared to 12% of male respondents.

Considering the group as a whole, 31% of the teenagers spend between 0 and 1 hour per week on playing games and 35% between 1 and 5 hours per week. Further, we found that 95% of the female teenagers in our survey can be classified as

casual gamers and 5% as gamers. For males, 40% can be classified as casual players, 49% as gamers and 10% as hardcore. Our survey showed that most teenagers spend time on playing games, and that there are major differences in how teenagers can be categorized as gamers in relation to gender.

TABLE 2 shows the time spent on playing mobile games per week. The results show that the majority of subjects in the survey spent less than 30 minutes on mobile games per week, and 90% less than 60 minutes. The survey also revealed that none of the respondents reported to spend more than 5 hours on mobile games. Further, the table shows that gender makes little difference in how much mobile games are played in contrast to time spent on playing video games in general. However, we notice that none of the female teenagers reported to play more than 2 hours of mobile games per week in contrast to up to 5 hours for male players. There is also little difference in how the casuals, gamers and hardcore players play mobile games, apart for the fact that there are some gamers and hardcore gamers that spend more time on mobile games (up to 5 hours).

TABLE 2 Time spent on playing mobile games per week

Time	0-30m	30-60m	1-2h	2-5h	5-10h	10h+
All	79%	11%	6%	5%	0%	0%
Female	84%	8%	8%	0%	0%	0%
Male	77%	12%	5%	7%	0%	0%
Casual	84%	10%	6%	0%	0%	0%
Gamer	71%	11%	6%	11%	0%	0%
Hardcore	86%	0%	0%	14%	0%	0%

B. Gaming Platform

The second part of the survey focused on the preferred type of gaming platform of the subjects, and the results are shown in TABLE 3. The vast majority of the teenagers (93%) prefer PCs and consoles, where as only 5% prefer a mobile game platform. The difference between genders is highly noticeable. Female teenagers to a larger degree prefer to play on a PC (60%) and on a mobile platform (12%). The male teenagers are almost evenly distributed between console (53%) and PC (45%), and as little as 2% prefer to play games on a mobile platform.

TABLE 3 Preferred Gaming Platforms

Platform	None	Mobile	Console	PC
All	2%	5%	44%	49%
Female	8%	12%	20%	60%
Male	0%	2%	53%	45%
Casual	4%	8%	46%	42%
Gamer	0%	0%	40%	60%
Hardcore	0%	0%	14%	86%
mCasual	3%	4%	39%	54%
mGamer	0%	6%	61%	33%
mHardcore	0%	11%	56%	33%

The results from TABLE 3 also reveals that no teenagers classified as a gamer or hardcore prefer the mobile game platform. Further that the hardcore gamers that spend most time on games highly prefer the PC platform (86%). In

contrast, the mHardcore players to a larger degree prefer the console platform (56%) in addition to the mobile platform.

TABLE 4 shows which specific platforms the teenagers play games on. Note that we did not ask whether the subjects own game platforms themselves, but only about the game platforms they play games on. This is important as many teenagers play games with friends at their friend's house. The majority of teenagers in this study (52%) play games on PC and the Playstation 3 (PS3) console. This result is probably unique to Norway, as PS3 is the most popular game console in Norway. For other countries, there would be a higher percentage of teenagers playing XBOX 360 and Nintendo Wii. An interesting oral comment from many of the participants in the survey was they had a Nintendo Wii at home, but they did not use it anymore as it was seen as a platform for kids. The results from TABLE 4 shows that there is a noticeable gender difference in that above one third of female teenagers (35%) play on PC, but also play on several other platforms. The boys focus to a larger extent their playing more on PC and PS3. For the casual, gamer and hardcore players, the most noticeable pattern is that hardcore players focus largely on PC. If we consider the mobile platforms (mobile game consoles, mobile phones and smart phones), we notice that the majority of the teenagers prefer to play on smart phones or another mobile phones (22%) compared to the mobile consoles Sony PSP and Nintendo DS (6%). It was also interesting to note that none of the female teenagers said that they play games on mobile consoles. Further that the mHardcore players mainly play mobile games on iPhone or other mobile phone. For mHardcore players, the most used game platforms are evenly distributed among PC, iPhone and other mobile phones (19% on each platform).

C. Game Genres

TABLE 5 shows which game genres the teenagers prefer. In the survey they were asked to indicate the top three game genres they preferred. If we consider all respondents, the most popular genres were strategy, shooters and action (all 15%), followed by adventure, racing and role-playing games (RPG) (all 10%), then sports games (7%), and platform games (5%). If we consider gender, we discover a noticeable difference. The top genres ordered from most popular to less popular for female teenagers were strategy/adventure (16%), racing (14%), and platform/simulation (9%). Similarly for male teenagers the top genres were shooters (19%), action (16%), strategy (15%), and RPG (12%). We were a bit puzzled that a higher percentage of female players put racing as a favorite genre (14%) compared to male players (8%). However, when asking the subjects about this phenomenon, the reason was rather obvious. Nintendo had just released a Mario Kart game on Nintendo Wii, which was very popular among the female players.

TABLE 5 also reveals noticeable differences in relation to how much time the respondents spend on playing games. In general casual gamers are more spread out in terms of game genres, where as hardcore players mainly focuses on few game genres. For casual gamers, the most popular game genres were racing (14%), action/strategy (13%), adventure (12%) and shooting/sports games (9%). For gamers, the most

popular genres were shooters (23%), strategy (19%), adventure (16%), and action (15%). For hardcore players, the most popular genres by far were adventure (41%) and RPG (32%). It is not strange that there is a strong correlation between the adventure and RPG genres and the amount of time spent on playing games. Most adventure and RPG games offer more than 100 hours of gameplay. From talking to the respondents we also learned that most of the hardcore players played World of Warcraft that fits into these two genres, as well as requiring a lot of time from dedicated players. We also discovered a similar pattern for mGamers and mHardcore players that preferred the adventure and RPG genres. Genres that few put as one of their three favorites were music, party, puzzle and fighting games. It is interesting and it confirms our belief that for the genres music and puzzle, female, casual and mCasual players are much higher represented than other groups.

III. CONCLUSION

The main findings in our survey on Norwegian teenagers were that the majority spends up to five hours per week on

playing, boys play much more than girls, the majority spend up to 30 minutes playing mobile games per week, boys prefer and play more on consoles than girls, most of the teenagers play games on PC and PS3, female players are more spread on different platforms, hardcore players focuses on PC gaming, and mHardcore players play equally on PC, iPhone and other mobile phones. Further, that the preferred game genres in general were strategy, shooter, and action games, female teenagers preferred adventure and race in addition to strategy, while male teenagers preferred shooter and action games. Player spending much time on playing games preferred adventure and RPG. The results also revealed that teenagers prefer smart phones or mobile phones to mobile consoles when playing mobile games.

As the video game culture is international and spread around the world, the results in this survey should be valid for other western countries. One result that will vary in different countries is which specific game platforms games are being played at, where Norway is different than most countries in that PS3 is a more popular game platform than both Nintendo Wii and XBOX 360.

TABLE 4 Which platform(s) are games played on

Platform	None	PC	PS3	Wii	XBOX	DS	PSP	iPhone	Android	Mobile
All	1%	32%	20%	9%	8%	4%	2%	9%	4%	9%
Female	4%	35%	13%	13%	9%	0%	0%	9%	4%	13%
Male	0%	31%	23%	8%	8%	6%	3%	10%	4%	8%
Casual	2%	32%	21%	9%	7%	3%	3%	9%	4%	11%
Gamer	0%	32%	20%	10%	10%	6%	1%	10%	4%	7%
Hardcore	0%	43%	7%	14%	14%	7%	0%	7%	0%	7%
mCasual	1%	31%	22%	12%	7%	3%	3%	8%	3%	11%
mGamer	0%	26%	11%	9%	11%	7%	0%	11%	7%	17%
mHardcore	0%	19%	15%	7%	11%	7%	0%	19%	4%	19%

TABLE 5 Preferred Game Genres

	Strategy	Shoot	Action	Adv	Race	RPG	Sport	Platform	Sim	Music	Party	Puzzle	Fight	Other
All	15%	15%	14%	10%	10%	10%	7%	5%	5%	2%	2%	2%	2%	1%
Female	16%	4%	7%	16%	14%	4%	6%	9%	9%	7%	1%	6%	0%	0%
Male	15%	19%	16%	8%	8%	12%	8%	4%	3%	1%	2%	1%	3%	1%
Casual	13%	9%	13%	12%	14%	5%	9%	8%	5%	4%	2%	4%	1%	1%
Gamer	19%	23%	15%	16%	4%	6%	5%	2%	4%	1%	2%	0%	3%	0%
Hardcore	9%	7%	5%	41%	2%	32%	2%	0%	0%	0%	0%	0%	2%	0%
mCasual	16%	15%	12%	10%	10%	10%	7%	6%	4%	3%	2%	3%	2%	0%
mGamer	9%	10%	13%	24%	6%	24%	6%	1%	4%	1%	1%	0%	1%	0%
mHardcore	7%	7%	8%	35%	2%	33%	2%	0%	4%	0%	2%	0%	0%	0%

REFERENCES

[1] J. P. Gee, "What video games have to teach us about learning and literacy," *Comput. Entertain.*, vol. 1, pp. 20-20, 2003.

[2] C. A. Anderson, et al., "Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: a meta-analytic review," *Psychol. Bull.*, vol. 136, pp. 151-173, 2010.

[3] D. Clarke and P. R. Duimering, "How computer gamers experience the game situation: a behavioral study," *Comput. Entertain.*, vol. 4, p. 6, 2006.

[4] J. L. Sherry, et al., "Video game uses and gratifications as predictors of use and game preference," in *Playing Computer Games: Motives,*

Responses, and Consequences, P. Vorderer and B. J., Eds.: Mahwah, NJ: Erlbaum, 2006.

[5] J. B. Funk, "Reevaluating the Impact of Video Games," *Clinical Pediatrics*, vol. 32, pp. 86-90, 1993.

[6] K. Lucas, "Sex Differences in Video Game Play: A Communication-Based Explanation," *Communication Research*, vol. 31, pp. 499-523, 2004.

[7] A. I. Wang, et al., "Survey on attitude towards pervasive games," presented at the Games Innovations Conference, Hong Kong, 2010.

[8] J. M. Smyth, "Beyond self-selection in video game play: an experimental examination of the consequences of massively multiplayer online role-playing game play," *Cyberpsychology and Behavior*, vol. 10, pp. 717-721, 2007.