

# Life Skills Developed by Those Who Have Played in Video Game Tournaments

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## Abstract

The purpose of this study was to determine if there are significant differences in the development of life skills, such as personal, educational, social, and work-related skills, between those who had and had not played in video game tournaments. Results from a survey of 203 students in a public research university are reported in the paper. Using Chi-square, statistically significant differences were found between students who had and had not participated in video game tournaments in the reported improvement of several life skills or abilities, such as *arithmetic skills, giving directions to others, functioning as a member of a team, leading a group of people, coordinating the activities of other people, and ability to memorize information*. The results show that playing in video game tournaments does have positive consequences.

**Keywords:** Video Games, Learning Skills by Playing Video Games, Video Games in Education, Survey of Video Game Players

## Introduction and Purpose of the Study

The number of people playing electronic video games in the United States of America is quite large. It has been estimated that, in 2011, video games were played in 71% of households in the country (entertainment software association, 2011). However, not all people who play video games also play in organized video game tournaments. The purpose of this study was to determine if there are significant differences in life skills, such as personal, educational, social, and work-related skills, developed by those who have and those who have not played in video game tournaments.

At the outset it must be pointed out that this study does not deal with professional video game players or those who are prone to playing games for long hours every day, but with students in a research university who, like many university students, play video games. A small proportion of these students who participated in the study have also played in video game tournaments.

It is reasonable to expect that due to the competitive nature of the tournaments, those who participate in video game tournaments have developed and honed their game playing skills to a greater

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degree than their peers who do not participate in video game tournaments. The purpose of this study is to determine if this additional effort on the part of tournament players helps or hinders their development of personal, educational, social, and work-related skills, when compared to their university peers who do not play in tournaments.

## Background

A survey of video game players was conducted in a large research university. Various findings based on analysis of the collected data are being reported in separate papers. Two papers (Thirunarayanan, Vilchez, Abreu, Ledesma, & Lopez, 2010; Thirunarayanan & Vilchez, 2012) have already been published and other manuscripts that are based on different aspects of the study are currently under preparation. In order to keep the amount of overlap between the different papers to a minimum, the scope of the review of the research literature in this paper is intentionally being kept to an adequate level. While the review of the research literature is admittedly and purposefully not exhaustive, it is nevertheless sufficient and illustrative of the body of the work in the field and serves to delineate the context for this study.

Some of the persuasive proponents for the use of video games for educational purposes include Prensky (2001; 2003), Gee (2007), Shaffer, Squire, Halverson, and Gee (2004) and Squire (2003). A selective review of the research literature does show that playing video games has positive effects on game players. A study by Jansz and Martens (2005) found that one of the reasons for playing online video games is the social contact with other players. Griffiths et al. (2011), who reviewed studies of gamers who played “massively multiplayer online role-playing games (MMORPGs),” noted that social interaction is an essential ingredient among those who play such games. Kong and Theodore (2011) studied gamers who played “fighting games” and concluded, “For community members who meet offline regularly, online communication serves as a useful tool for organizing and sharing information, and strengthens social connections.” This indicates that game players are not always individuals who are isolated from each other without any contact with other gamers. They do form friendships with other gamers and develop a sense of community.

The use of video games helps students be more engaged (Annetta, Minogue, Holmes, & Cheng, 2009). An experimental study conducted by Din and Calao (2001) showed that kindergartners in the experimental group performed significantly better on the posttest in the areas of spelling and decoding. Positive aspects of playing video games reported by others include improved classroom discipline (Lee, Luchini, Michael, Norris, & Soloway, 2004), social interaction (Lee, et al., 2004; Lenhart et al., 2008), the development of pro-social behavior (Greitemeyer and Osswald, 2010), and improved civic engagement (Lenhart et al., 2008). Furthermore, a study conducted by Nardi and Harris (2006) showed that video games players collaborated with each other in different ways. Playing action video games has been shown to increase attention skills (Dye & Bavelier, 2010; Dye, Green, & Bavelier). Finally, cooperation and coordination are other skills that video games help players to develop (Ducheneaut and Moore, 2005).

A previous study by the authors of this paper has also shown that participants did report acquiring various educational, personal, social, and work-related skills, “such as communication skills, coordination skills, leadership skills and other social skills” as a result of playing video games (Thirunarayanan et al., 2010). As mentioned earlier, the purpose of this study is to determine if there are differences in the educational, personal, social, and work-related skills developed by those who play in video game tournaments as opposed to those who do not play in such tournaments.

## Methods

The survey methodology is used in this study of video game players in a university. Surveys are used routinely to collect data related to education (Burns, Wang, & Henning, 2011). Groves et al. (2009, p. 30) suggest addressing the following five questions before conducting a survey:

- 1) What is the target population (whom is it studying)?
- 2) What is the sampling frame (how to identify the people who have a chance to be included in the survey)?

- 3) What is the sample design (how to select the respondents)?
- 4) What is the mode of data collection (how to collect the data)?
- 5) Is it an ongoing survey or a one-time survey?

The answer to the first question in the context of our study is simple – the survey’s target population consists of university students. The response to the second question is university students who play video games. Answers to the third and fourth question are provided in the following paragraphs that discuss the study sample and data collection. The response to the last question is that at this point in time there are no plans to conduct the survey again. Qualitative data were also collected from the participants of this study, but since those data are by no means related to the time the participants spent playing in video game tournaments, they are not being reported in this paper.

The data for this study were derived from a survey that was completed by 203 students who were enrolled in a growing research university that is located in the United States. The 203 subjects who completed the survey were selected using a combination of convenience (Ferber, 1977), snowball (Lunsford & Lunsford, 1995) and the intercept (Bush & Hair, 1985) sampling strategies. After the study was approved by the Institutional Review Board (IRB) at the university, many course instructors were approached via email and in person seeking permission to visit their classrooms and survey their students. Students who played video games were requested to identify other video game players that they knew and these players were included in the study. Individuals and groups of students who were present in the student union building, the library, and other heavily traversed areas on campus were approached and recruited to participate in the study if they played video games.

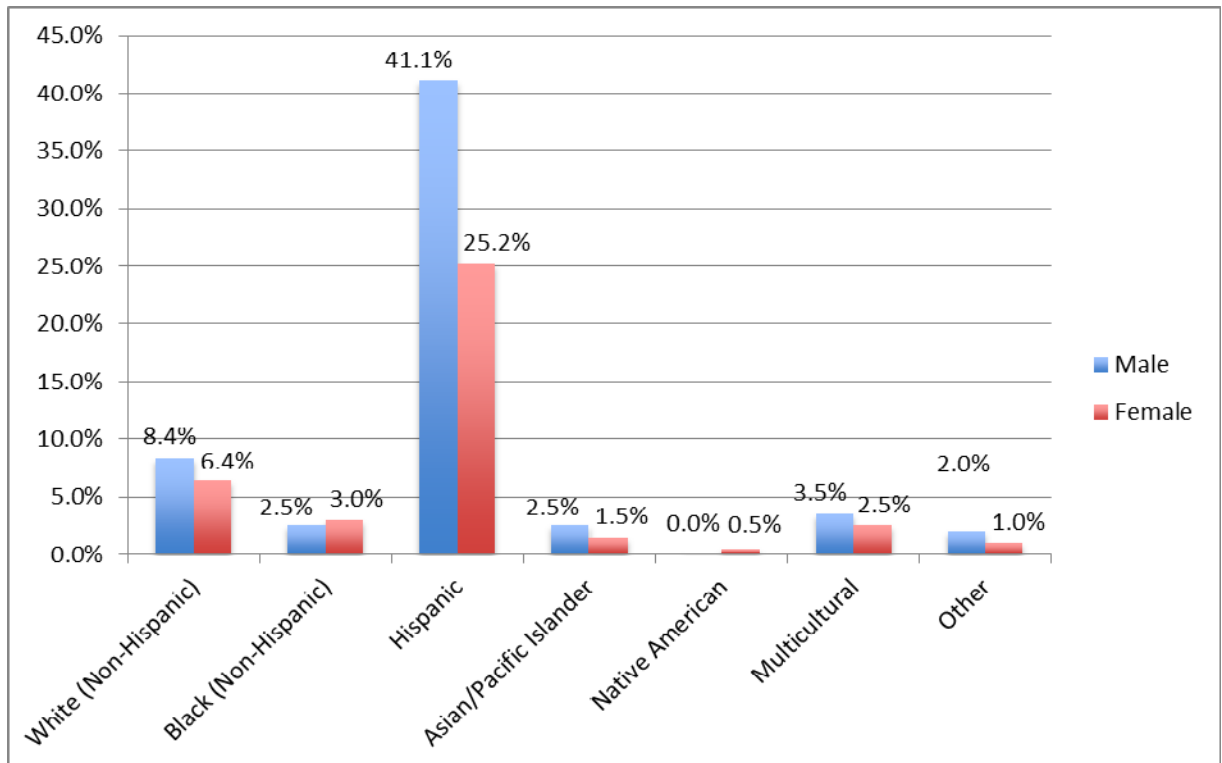


Figure 1. Distribution of the sample by sex and ethnicity.

The gender and ethnic / racial distributions of the sample are depicted in Figure 1. As shown in Figure 1, Hispanics were the largest group in the sample, with 66.3% or 134 of the participants reporting that they belonged to this group; eighty-three (61.9%) were males and fifty-one (38.1%)

were females. The rest of the sample was distributed among other racial / ethnic groups as illustrated in Figure 1.

## Results

One of the items on the survey asked the study participants, “Have you ever participated in a video game tournament?” The participants were asked to check either “Yes” or “No” in response to this question. Of the two hundred participants who responded to this question, sixty-two (31%) indicated that they had participated in video game tournaments. One hundred and thirty-eight (69%) indicated that they had not participated in video game tournaments. Three participants did not respond to this question.

Three genres of games seem to be more popular than other genres with the sixty-two study participants who reported that they had participated in video game tournaments. The genres are strategy, role playing, and action games, as shown in Figure 2.

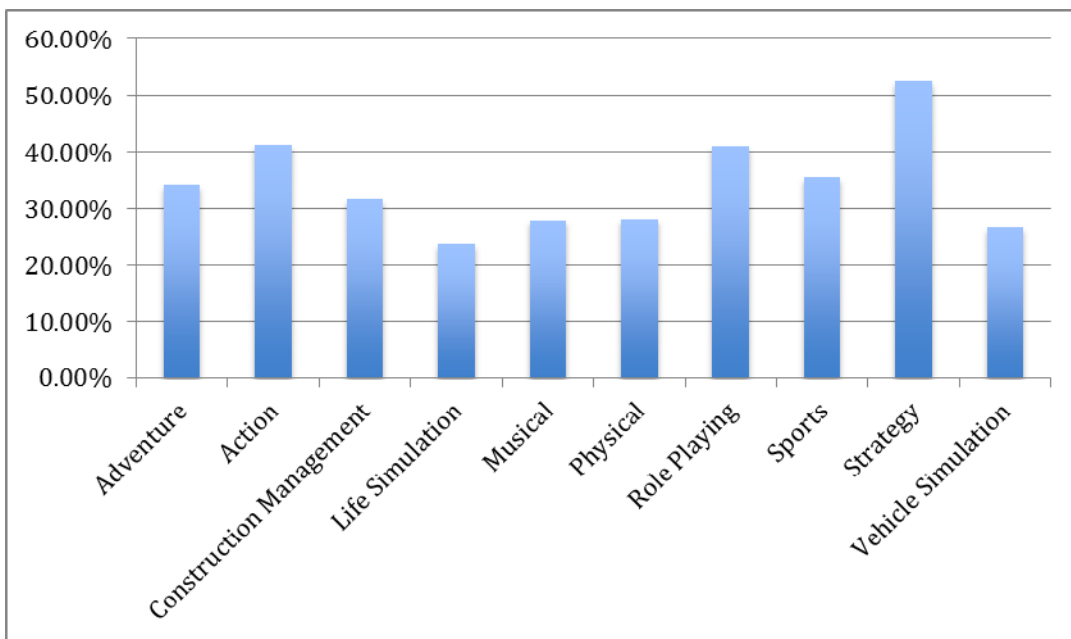


Figure 2. Percentage of tournament players and genres of games played.

Some examples of other items included in the survey that asked participants about the various skills that they reportedly did or did not learn as a result of playing video games were:

- Helped me develop leadership skills
- Taught me how to coordinate the activities of other people
- Improved my ability to memorize information
- I have become a better leader of people
- I am able to complete my schoolwork in a timely manner
- I have become a better coordinator of peoples' activities
- Following directions
- Leading a group of people
- Functioning as a member of a team

Participants were instructed to respond to the above items using the following scale:

1= Strongly Agree    2= Agree    3=Disagree    4=Strongly Disagree

The categories of “Strongly Agree” and “Agree” were combined into a single category. The categories “Disagree” and “Strongly Disagree” were similarly combined. McCall (2001) suggests that when the sample sizes are small, researchers could take recourse to collapsing the response categories. In this study, responses to the survey items were collapsed in order to keep the sample sizes for each response category above the accepted minimum level of 5 per category or cell (Greenland, 1989).

After the data were appropriately recoded, SPSS was used to run cross tabulations. Chi-square statistics were derived and used to determine if there were significant differences, in the terms of the personal, social, and work-related skills that participants reported that they either learned or did not learn, between those who had and had not participated in video game tournaments.

### ***Coordinating the Activities of Other People***

There was a statistically significant difference between those who played in video game tournaments and those who did not play in tournaments when it came to coordinating the activities of other people.

As shown in Table 1, a significantly larger proportion of those who had played in video game tournaments reported that playing video games taught them how to coordinate other peoples’ activities. A slightly larger proportion of those who had not played in tournaments indicated that they had not learned how to coordinate the activities of other people.

Table 1. *Playing Video Games Has Taught Me How to Coordinate the Activities of Other People*

Coordinate the Activities of Other People		Participated in a video game tournament?		Total
		Yes	No	
Agree with statement	Count	44	64	108
	Expected Count	33.8	74.2	108.0
	% within Participated in a video game tournament?	71.0%	47.1%	54.5%
Disagree with statement	Count	18	72	90
	Expected Count	28.2	61.8	90.0
	% within Participated in a video game tournament?	29.0%	52.9%	45.5%
Total	Count	62	136	198
	Expected Count	62.0	136.0	198.0
	% within Participated in a video game tournament?	100.0%	100.0%	100.0%

Pearson Chi-Square = 9.81; df = 1; Asympt. Sig. (2-sided) = .002 |

Fisher's Exact Test, Exact Sig. (2-sided) = .002

**Performance at Work Not Adversely Affected**

A very large proportion of those who had not played in video game tournaments disagreed with the statement that playing video games had adversely affected their performance at work. The percentages of survey participants who had not played in tournaments who disagreed with the statement and who agreed with the statement were 82.5% and 17.5% respectively. In the case of those who had played in video game tournaments the corresponding percentages were 67.7% and 32.3%, as shown in Table 2.

Table 2. *Playing Video Games Has Adversely Affected My Performance at Work*

Adversely Affected My Performance at Work		Participated in a video game tournament?		Total
		Yes	No	
Agree with statement	Count	20	24	44
	Expected Count	13.7	30.3	44.0
	% within Participated in a video game tournament?	32.3%	17.5%	22.1%
Disagree with statement	Count	42	113	155
	Expected Count	48.3	106.7	155.0
	% within Participated in a video game tournament?	67.7%	82.5%	77.9%
Total	Count	62	137	199
	Expected Count	62.0	137.0	199.0
	% within Participated in a video game tournament?	100.0%	100.0%	100.0%

Pearson Chi-Square = 5.38; df = 1; Asympt. Sig. (2-sided) = .020 |

Fisher's Exact Test, Exact Sig. (2-sided) = .027

### ***Ability to Memorize Information***

Those who played in tournaments also reported that their ability to memorize information had improved. The data in Table 3 show that both groups of participants reported improvements in their ability to memorize information. However, the proportion of those who had played in video game tournaments who reported positive benefits was much larger than the proportion of those who had not played in tournaments.

Table 3. *Playing Video Games Has Improved My Ability to Memorize Information*

Improved My Ability to Memorize Information		Participated in a video game tournament?		Total
		Yes	No	
Agree with statement	Count	51	89	140
	Expected Count	43.6	96.4	140.0
	% within Participated in a video game tournament?	82.3%	65.0%	70.4%
Disagree with statement	Count	11	48	59
	Expected Count	18.4	40.6	59.0
	% within Participated in a video game tournament?	17.7%	35.0%	29.6%
Total	Count	62	137	199
	Expected Count	62.0	137.0	199.0
	% within Participated in a video game tournament?	100.0%	100.0%	100.0%

Pearson Chi-Square = 6.12; df = 1; Asympt. Sig. (2-sided) = .013 |

Fisher's Exact Test, Exact Sig. (2-sided) = .018

**Become Better at Making Decisions in My Daily Life**

As the data in Table 4 show, playing in video game tournaments did not improve the decision making skills of study participants in their daily lives. To the contrary, larger proportions of those who did not play in video games tournaments reported that their decision making skills in their daily lives had improved. Among those who had played in tournaments there was a tie, with 50% of the students agreeing with the statement that their decision making skills had improved, while the remaining 50% disagreed with the statement.

Table 4. *As A Result Of Playing Video Games I Have Become Better at Making Decisions in My Daily Life*

Making Decisions in My Daily Life		Participated in a video game tournament?		Total
		Yes	No	
Agree with statement	Count	31	40	71
	Expected Count	22.1	48.9	71.0
	% within Participated in a video game tournament?	50.0%	29.2%	35.7%
Disagree with statement	Count	31	97	128
	Expected Count	39.9	88.1	128.0
	% within Participated in a video game tournament?	50.0%	70.8%	64.3%
Total	Count	62	137	199
	Expected Count	62.0	137.0	199.0
	% within Participated in a video game tournament?	100.0%	100.0%	100.0%

Pearson Chi-Square = 8.04; df = 1; Asympt. Sig. (2-sided) = .005 |

Fisher's Exact Test, Exact Sig. (2-sided) = .006



## Communicating Verbally

A significantly larger proportion of those who had participated in video game tournaments agreed that such experiences helped them improved their ability to communicate verbally. Data in Table 5 also show that larger proportions of those who had no tournament playing experience disagreed with the statement.

Table 5. *As a Result of Playing Video Games My Skills Have Improved in the Following Areas: Communicating Verbally*

Communicating Verbally		Participated in a video game tournament?		Total
		Yes	No	
Agree with statement	Count	33	47	80
	Expected Count	25.2	54.8	80.0
	% within Participated in a video game tournament?	53.2%	34.8%	40.6%
Disagree with statement	Count	29	88	117
	Expected Count	36.8	80.2	117.0
	% within Participated in a video game tournament?	46.8%	65.2%	59.4%
Total	Count	62	135	197
	Expected Count	62.0	135.0	197.0
	% within Participated in a video game tournament?	100.0%	100.0%	100.0%

Pearson Chi-Square = 5.97; df = 1; Asympt. Sig. (2-sided) = .015 |

Fisher's Exact Test, Exact Sig. (2-sided) = .019

**Leading a Group of People**

Compared to those who had no tournament playing experience, a significantly larger proportion of those who had played in such events agreed that their ability to lead a group of people had improved. These data are shown in Table 6. As the data indicate, much larger proportions of those who had no experience playing in video game tournaments indicated that their ability to communicate verbally had not improved.

Table 6. *As a Result of Playing Video Games My Skills Have Improved in the Following Areas: Leading a Group of People*

Leading a Group of People		Participated in a video game tournament?		Total
		Yes	No	
Agree with statement	Count	33	49	82
	Expected Count	25.9	56.1	82.0
	% within Participated in a video game tournament?	53.2%	36.6%	41.8%
Disagree with statement	Count	29	85	114
	Expected Count	36.1	77.9	114.0
	% within Participated in a video game tournament?	46.8%	63.4%	58.2%
Total	Count	62	134	196
	Expected Count	62.0	134.0	196.0
	% within Participated in a video game tournament?	100.0%	100.0%	100.0%

Pearson Chi-Square = 4.83; df = 1; Asympt. Sig. (2-sided) = .028 |

Fisher's Exact Test, Exact Sig. (2-sided) = .030

### ***Functioning As a Member of a Team***

Both groups of study participants reportedly improved their skills when it came to functioning as members of teams. However, as the data in Table 7 show, a much larger proportion of those who had participated in video game tournaments reported improvement in such skills compared to those who had not played in tournaments.

Table 7. *As a Result of Playing Video Games My Skills Have Improved in the Following Areas: Functioning as a Member of a Team*

Functioning as a Member of a Team		Participated in a video game tournament?		Total
		Yes	No	
Agree with statement	Count	51	82	133
	Expected Count	41.2	91.8	133.0
	% within Participated in a video game tournament?	83.6%	60.3%	67.5%
Disagree with statement	Count	10	54	64
	Expected Count	19.8	44.2	64.0
	% within Participated in a video game tournament?	16.4%	39.7%	32.5%
Total	Count	61	136	197
	Expected Count	61.0	136.0	197.0
	% within Participated in a video game tournament?	100.0%	100.0%	100.0%

Pearson Chi-Square = 10.43; df = 1; Asympt. Sig. (2-sided) = .001 |

Fisher's Exact Test, Exact Sig. (2-sided) = .002

### ***Giving Directions to Others***

The data in Table 8 show that there is a statistically significant difference between those who had played in video game tournaments and those who had not, in terms of improvements in their abilities to give directions to others. A much larger proportion of those who had participated in tournaments reported improvement in their ability to give directions to others as opposed to those who have not played in tournaments.

Table 8. *As a Result of Playing Video Games My Skills Have Improved in the Following Areas: Giving Directions to Others*

Giving Directions to Others		Participated in a video game tournament?		Total
		Yes	No	
Agree with statement	Count	43	65	108
	Expected Count	33.4	74.6	108.0
	% within Participated in a video game tournament?	70.5%	47.8%	54.8%
Disagree with statement	Count	18	71	89
	Expected Count	27.6	61.4	89.0
	% within Participated in a video game tournament?	29.5%	52.2%	45.2%
Total	Count	61	136	197
	Expected Count	61.0	136.0	197.0
	% within Participated in a video game tournament?	100.0%	100.0%	100.0%

Pearson Chi-Square = 8.76; df = 1; Asympt. Sig. (2-sided) = .003 |

Fisher's Exact Test, Exact Sig. (2-sided) = .003

## Improved Arithmetic Skills

Do arithmetic skills improve as a result of playing in video game tournaments? Data in Table 9 suggest that arithmetic skills are indeed improved as a result of playing in tournaments. Larger proportions of those who had not played in tournaments reported that there was no improvement in their arithmetic skills.

Table 9. *As a Result of Playing Video Games My Skills Have Improved in the Following Areas: Arithmetic Skills*

Arithmetic Skills		Participated in a video game tournament?		Total
		Yes	No	
Agree with statement	Count	37	56	93
	Expected Count	28.8	64.2	93.0
	% within Participated in a video game tournament?	60.7%	41.2%	47.2%
Disagree with statement	Count	24	80	104
	Expected Count	32.2	71.8	104.0
	% within Participated in a video game tournament?	39.3%	58.8%	52.8%
Total	Count	61	136	197
	Expected Count	61.0	136.0	197.0
	% within Participated in a video game tournament?	100.0%	100.0%	100.0%

Pearson Chi-Square = 6.41; df = 1; Asympt. Sig. (2-sided) = .011 |

Fisher's Exact Test, Exact Sig. (2-sided) = .014

## Discussion of the Findings

Statistically significant proportions of study participants who had played in video game tournaments reported that they had developed positive skills compared to those who had indicated that they had not played in tournaments.

Some of the work related skills reportedly developed by study participants who had played in video game tournaments were leading a group of people, giving directions to others, functioning as a member of a team, and coordinating the activities of other people. Results also showed that the performance at work was not adversely affected in the case of those who played in tournaments.

Those who had tournament playing experience also reported improvements in their arithmetic skills and their ability to memorize information. These are both valuable personal and education related skills that will help them not only in their personal lives but also in their educational careers. As far as decision making skills in their daily lives were concerned, participation in game tournaments had no positive or negative consequences.

The findings of this study suggest that classroom teachers could use video games in a tournament format to facilitate the learning of life skills. While intense tournament competition can be stressful to some students, others could learn from less intense and even friendly competitive tournament environments. Educational games could be built to facilitate varying levels of such competitive behavior in the classroom. Teachers should be given the option of varying the intensity of the competition in the tournament settings depending on the characteristics of the students in their classrooms.

A question that could be addressed in similar future papers is whether certain types or genres of games help players develop certain types of skills. Findings of such studies could be useful in assigning different games to different students for the purpose of developing specific skills, such as memorization skills and arithmetic skills, to name two examples.

## Conclusion

The findings of this study show that for the sample of university students who participated in this study, who are not necessarily hard core gamers, there were several self-reported positive consequences and no reported negative consequences associated with playing in video game tournaments. Not many research studies have looked at differences between those who have and have not played in tournaments and the life skills that they did or did not develop. This paper fills this gap in the literature and its findings provide useful information about the positive aspects of playing in video game tournaments, and also help combat negative perceptions about playing in video game tournaments. Future studies of this nature could include qualitative data in the form of focus groups or interviews with participants. Such qualitative data will certainly add to the findings of studies that utilize a survey methodology. In conclusion, playing in video game tournaments does seem to be associated with the development of several life skills.

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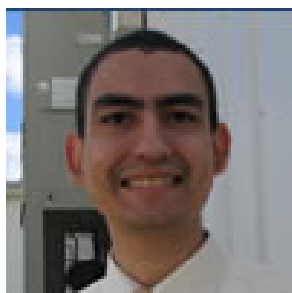
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## Biographies



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