Journal of Social Signs Review

Academic Motivation and Social Functioning Among Students Having Game Addiction

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Abstract

The present study was designed to explore the academic motivation, game addiction, and social functioning among students. For this study, 300 individuals from different Schools and Colleges of Rawalpindi and Islamabad were approached, including males (50%) and females (50%). The instruments used in a present study were Game Addiction Scale (α=.82) developed by Lemmen, Valkenburg & Peter (2009), Game Full Experience Questionnaire (α=.98) developed by John Hogbergetal, Juho Hamari and Erik Wastlund (2019), Academic Motivation Scale (α=.91) developed by Vallerand, et al, (1992), Social Functioning Questionnaire (α=.70) developed by Tyrer, et al, (2005). Results of the present study indicate that game addiction is negatively correlated with social functioning but positively correlated with academic motivation. Whereas all subscales of gaming-experience are positively correlated with social functioning and academic motivation. Results of regression analysis indicated gaming experience is a significant predictor of social functioning and academic

motivation, however, game addiction subscales are non-significant predictors of social functioning except for the confidence subscale. The t-test showed significant differences among the group of gender with relation to study gaming experience and game addiction variables. Moderation analysis indicates that game addiction significantly moderates the relationship between academic motivation and social functioning. The finding of this research has implications for promoting our understanding in usage of games in the educational setting for higher academic motivation and better social functioning among students.

Keywords: Academic Motivation, Social Functioning, Game Addiction, Game Full Experience.

Introduction

Game playing exists since ancient times. However, the advent of internet game playing has been transformed from offline to online and from the playground and board games to digital gadgets including mobile devices, laptops, to the digital console. The ease and access of digital gaming have thus become one of the most popular addictive internet activities (Wan & Chiou, 2006).

Among online gaming, computer games have gained greater popularity as a free time; relaxation activity among children and adolescents (Pew Research Centre, 2018). There is mixed research support on the utility of digital games. For example, on one side research provide evidence that digital game playing enhances the mental abilities motivational, and social abilities of an individual and generally offering an enjoyable way of spending time (Mihara & Higuchi, 2017). It is also useful for social functioning. It requires mental exercises, emotional stimulation, and modification in thinking, games played in the form of a group enhance sociability, as well as the cognitive ability of the players (Dobrowolski et al; 2015; Bediou et al, 2018). Taking an alternative perspective, the disadvantage of the digital game

includes a decline in self-control, reaction delay, attention disorder, increased loneliness and, greater addiction toward gaming (Wang et al., 2018).

According to recent studies that by using different tactical games the gamer could enhance mental abilities including problem-solving, academic goals, etc. Mostly digital games are used to enhance the mental abilities of the gamers, but some digital games generalize the real-world aspects. Digital games always made the positive feedback on players' simulation. It can help to enhance a player's abilities to convert a difficult task into an easier one by doing practice or logical thinking. Digital games will stimulate children when they are confused or not sure about their capabilities. If the children of the players playing digital games use it effectively, it is helpful and can manage player attitude at the same time. Digital games are most helpful as an educational tool, and able to do problem-based solving using different types of mental activities and strategies. Digital games are also used for self-assessment, social learning environment. Digital games are a helpful way to explore the real world in many ways. Digital games will be used for developing social skills in people. However, studies show that child's intelligence and abilities sure that motivate the intrinsic aspects and it can affect their academic goals. Only they believe that intelligence is adaptable through time and effort. So that digital games for training purposes to acquire an incremental theory of intelligence, digital games provide a sudden outcome for its games (Dweck & Molden, 2005).

Moreover, digital gaming keeps individuals away from social groups as they paid a huge amount of attention to game success rather than to their education and social functioning. As they feel that gaming is most significant than real-life events. (Griffiths 2003; Ryan et al., 2006).

In Pakistan, digital gaming is generally not made part of educational learning and assessment strategies. Therefore, we are not much aware of its positive and negative academic outcomes such as academic motivation and social functioning. Therefore, the

present study aims to explore the effect of digital gaming on academic motivation and social functioning among students.

Digital Gaming

Game is defined as a "system in which players engage in artificial conflict, defined by rules and results are transformed in a quantifiable outcome". A digital game is a game that integrates with computer technology. For example, games that are being played on televisions, computers, laptops, smartphones, and tablets. Based on an unconventional PC and an Internet source that provide an imaginary environment, games that provide the opportunity to communicate with other individuals separately then players lean towards more attractive people.

During recent era, various research examining the possible learning benefits obtained by game-based learning (GBL), the use of game-based technology to provide, assistance, and improve education, knowledge, judgments, and estimation (Connolly, 2007). Computerized games are used as an educational tool that provides mental exercise which contains interesting moments and components that can cover the main points of learning. Modern studies reveal the abilities of advanced entertainment that children taking from it. Different scholars believed that teacher consider using digital games is useful in the classroom as assistance to help in gaining knowledge effectively. Game Creators, clinician and educationist endeavor to identify what influences a teenager in digital games (Salich, Oppl, & Kristen, 2006).

Academic Motivation

Academic motivation implies a desire or willingness to achieve something that resembles motivation, incentives explain why accompanying behavior occurs, what are the explanations for this view (Demir & Kutlu, 2018). Academic motivation involves knowledge and interest with certain tasks. It also includes expectancy and inspiration to complete the various types of tasks including problematic task (Koseogeu, 2013). It implies student's study

which demonstrates consistency in their actions, gain new abilities, completing tasks as specified in the self-standard and gain testing skills. Motivation occurs in following main ways.

Intrinsic motivation is when a person is driven to perform an activity for their own satisfaction, not for external rewards, reflecting self-determination (Koursah, 2011). Extrinsic motivation involves performing tasks for external incentives rather than personal pleasure (Deci & Ryan, 2000). A motivation refers to a lack of both intrinsic and extrinsic motivation, where a person acts without interest or confidence in the task (Cokley, 2000; Wichadee & Pattanapichet, 2018; Rosheen et al, 2024).

Social Functioning

Social functioning involves a person's interactions with their environment, influencing their roles in work, family, and relationships (Ladd, 2005). Studies show that consistent social functioning with peers predicts future social functioning, with peer relationships positively affecting growth in social, emotional, and educational areas (Ladd, 2005). Positive friendships are crucial for educational success and school adaptation (Wentzel, 1991). Inclusive classrooms foster mutual relationships, enhancing social acceptance among students (David & Estell, 2008). However, increased access to the internet and video game addiction can negatively impact social functioning, leading to issues like social isolation, poor self-control, maladaptive behaviors, and reduced academic motivation (Eijnden et al., 2018; Erhel & Jamet, 2013).

Rationale

In Western countries, schools use digital games to boost students' interest in learning and their thinking skills. In Pakistan, digital gaming is popular, but most research focuses on its negative effects, like addiction. This study wants to look at how digital games can help students be more motivated to learn and improve their social skills. By finding games that enhance skills like problem-solving, math, and reading, we can show the positive side of

gaming. Encouraging the use of educational games might also reduce gaming addiction and help students feel more confident and capable. Schools can hold workshops to teach students and parents about the benefits of educational games.

Research Design

This study is based on a cross-sectional study method.

Sample/Participant

The sample comprised of 300, including 150 males and 150 females of F.G Girls High School, Rawalpindi, F.G Boys High School, Rawalpindi, and F.G Liaquat Ali Degree College for Boys, Rawalpindi, Women Degree College, Rawalpindi, and Federal Government Degree College for Girls, Islamabad, and Islamabad Model College for Boys. The age range of the sample was from 14-18 years (*M*= 15.75, *SD*= 1.59). A purposive sampling technique was used for data collection.

Instruments

Game Addiction Scale: Lemmens, Valkenburg, Peter (2009) developed the Game Addiction Scale for Adolescents (GAS). Gaming Addiction Scale comprises of 21 items, Score range from 1 to 5 Likert scale never to very often scale comprises of seven subscales including Salience, Tolerance, Mood Modification, Relapse, Withdrawal, Conflict and Problems.

Game full Experience Questionnaire: Johan Hogbergetal, Juho Hamari and Erik Wastlund (2019) developed the Game full Experience Questionnaire. Game full Experience Questionnaire comprises of 56 items, score ranges from 1 to 7-point Likert scale strongly disagree to strongly agree. Game full Experience Questionnaire comprises of seven subscales including Accomplishment, Challenge, Competition, Guided, Immersion, Playfulness, Social experience.

Academic Motivation Scale: Vallerand, Pelletier, Blais, Briere, Senecal and Vallieres (1992) developed the Academic Motivation Scale (AMS) through representation on the self-determination theory (SDT) proposed by Deci and Ryan (1985). Academic motivation scale

comprises of 28 items, built on 5-point Likert Scale ranged from strongly agree to strongly disagree. Academic motivation scale comprises of seven subscales consist of three intrinsic motivation subscales, three extrinsic motivation subscales, and one A motivation subscale.

Social Functioning Questionnaire: Tyrer, Nur, Crawford, Karlsen, Mclean, Rao and Johnson (2005) developed the Social Functioning Questionnaire. Social functioning questionnaire comprised of 8 items self-report scale (score range 0-24), was developed from the social functioning schedules. The SFQ was developed for the quick assessment of perceived social functioning.

Procedure

Questionnaires were provided to the participants at respective institutions, where they are studying. The purpose of the research was verbally presented to the participants and afterwards they were asked to complete the questionnaire. Informed consent was obtained from concerned authorities and participants before data collection. Ethical approval was attained from Ethical Review Board, Department of Psychology, IIUI, Ethics Committee, along with head of the institutes. In addition, inform consent was taken from the participants to ensure their privacy and confidentially to the matters.

Results

Table 1: *Psychometric Properties of the Study Variables/Scales (N=300)*

Variables	K	α	M (SD)	Range Potential	Actual	Skewness	Kurtosis
GES	56	.98	212.16(85.54)	108-392	56-392	.50	-1.39
Accomplishment	08	.93	30.98(13.62)	10-56	08-56	.42	-1.39
Challenge	08	.92	30.34(12.91)	13-56	08-56	.43	-1.36

Competition	07	.93	26.57(12.23)	11-49	07-49	.46	-1.39
Guided	07	.92	27.73(10.95)	13-49	07-49	.49	-1.32
Immersion	09	.92	33.00(13.59)	14-63	09-63	.70	-.94
Playfulness	09	.93	34.06(14.22)	16-63	09-63	.55	-1.19
Social Experience	08	.93	29.46(12.46)	10-56	08-56	.56	-1.16
GAS	21	.82	7.06(2.76)	3-14	21-105	.48	-.29
Salience	03	.57	7.05(2.75)	3-14	03-15	.48	-.29
Tolerance	03	.69	7.02(2.39)	3-15	03-15	.98	1.56
MM	03	.59	7.53(2.47)	3-15	03-15	.48	.83
Relapse	03	.56	7.55(2.32)	3-15	03-15	.19	.09
Withdrawal	03	.51	7.86(2.50)	3-15	03-15	-.13	.09
Conflict	03	.54	7.39(2.55)	3-13	03-15	-.16	-.70
Problems	03	.62	7.55(2.53)	3-14	03-15	-.15	-.15
SFQ	08	.70	14.05(4.52)	6-24	0-24	.27	.77
AM	28	.91	76.28(18.76)	28-140	28-140	.98	.95
Extrinsic Motivation	12	.87	32.86(9.73)	12-60	12-60	1.02	.76
Intrinsic Motivation	12	.79	33.81(7.95)	12-60	12-60	.64	.53

A Motivation	04	.58	9.60(3.20)	4-20	04-20	.87	.58

Note: GES= Game full Experience Scale; GAS = Game Addiction Scale; SFQ = Social Functioning Questionnaire; MM= Mood Modification; AM= Academic Motivation

Values of Skewness and kurtosis for all scales and subscales are lower than 2 which represents the normality of the data. Reliabilities showed that all scales used in the current investigation have more than .50 alpha consistency coefficients which show acceptable internal reliability.

Table 2:   *Correlations among study variables (N=300)*

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1-Accomplishment	-	.89*	.89*	.86*	.79*	.85*	.82*	.92*	.09	.21*	.35*	.10	-.07	-.29*	-.16*	.09	.44*	.63*	.53*	.47*	.63*
2-Challenge		-	.92*	.92*	.85*	.91*	.87*	.96*	.13*	.22*	.37*	.08	-.04	-.27*	-.19*	.13*	.43*	.65*	.55*	.46*	.65*
3-Competition			-	.93*	.89*	.91*	.88*	.97*	.14*	.23*	.36*	.11	.02	-.25*	-.18*	.14*	.45*	.63*	.54*	.53*	.65*
4-Guided				-	.87*	.91*	.88*	.96*	.14*	.22*	.36*	.11	.03	-.19*	-.14*	.14*	.42*	.64*	.56*	.50*	.65*
5-Immersion					-	.88*	.87*	.93*	.19*	.31*	.38*	.16*	.11*	-.12*	-.07	.19*	.41*	.54*	.45*	.52*	.56*

Variable	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
6-Playfulness	-	.90**	.96**	.13*	.25**	.41**	.14	.00	-.26**	-.18**	.13*	.39**	.66**	.55**	.47**	.65**
7-Social Experience		-	.94**	.12*	.21**	.34**	.11	-.05	-.22**	-.17**	.12*	.38**	.58**	.49**	.47**	.59**
8-GES			-	.14**	.25**	.39**	.12**	.00**	-.24**	-.17**	.14*	.44**	.65**	.55**	.52**	.66**
9-Salience				-	.55**	.44**	.46**	.43**	.40**	.37**	1.0**	.05	.11	.14*	.11	.13*
10-Tolerance					-	.47**	.43**	.39**	.28**	.38**	.55**	.00	.18**	.16**	.22**	.19**
11-Mood Modification						-	.35**	.29**	.09	.19**	.44**	.15**	.37**	.27**	.22**	.35**

Variable										
12-Relapse	-	.39**	.43**	.45**	.46**	.05	.14*	.19**	.21**	.19**
13-Withdrawal		-	.39**	.33**	.43**	.00	.05	.03	.11	.05
14-Confidence			-	.46**	.40**	.21**	.14*	-.06	.12*	-.08
15-Problems				-	.37**	-.01	-.09	-.03	.06	-.05
16-GAS					-	.05	.11	.14*	.11	.13*
17-SFQ						-	.27**	.22**	.15*	.26**
18-Extrinsic Motivation							-	.80**	.50**	.95**
19-Intrinsic Motivation								-	.55**	.93**

20-A motivation	–	.67
21-AMS		–

Note. ***p < .001, **p < .01, *p < .05

Note: GES= Game full Experience Scale; GAS = Game Addiction Scale; SFQ = Social Functioning Questionnaire; AM= Academic Motivation

Table 3 shows results of the Pearson correlation. Game addiction is negatively correlated with the social functioning but positively correlated with academic motivation. But the subscale of game addiction salience, tolerance, mood modification and relapse are positively correlated with social functioning. Whereas all subscales of gaming experience are positively correlated with social functioning and academic motivation.

Table 3: *Simple Linear Regression showing Gaming Experience (Independent variable) positively Predicts of Social Functioning (Dependent Variable) (N=300)*

	Variables	Social Functioning (outcome)				
	Predictors	B	SEB	β	t	p
	Constant	9.425	.68		13.81	.000
I	Game Full accommodation	.02	.08	.06	.27	.000
II	Game Full challenge	.08	.05	.07	.43	.000
III	Game Full competition	-.05	.09	.20	.78	.000
IV	Game Full guided	-.01	.10	.13	-.53	.000
V	Game Full immersion	-.10	.07	.03	-.12	.000
VI	Game Full playfulness	-.07	.08	.31	-1.19	.000
VII	Game Full social experience	-.07	.07	.20	-.93	.000
VIII	Total Game Full Experience Scale	.04	.05	.83	.75	.000

Note. R= .466 R^2= .218

Table 4 represents linear regression analysis with gaming experience as predictor variable and social functioning as an outcome variable. Results indicate that academic motivation explains 21% variance in social functioning F (11.602) = 10.65, $p<.01$ and significantly predicts social functioning $t = (299) = 13.81$, $p< .001$. In this model, all variables are significant predictors of social functioning.

Table 4: *Simple Linear Regression showing Game Addiction (Independent variable) as Predictor of Social Functioning (Dependent Variable) (N=300)*

	Variables	Social Functioning (Outcome)				
	Predictors	B	SEB	β	t	p
I	Constant	13.87	1.17		11.82	.000
II	Salience	.13	.12	.08	1.13	.259
III	Tolerance	-.18	.13	-.10	-1.37	.172

IV	Mood Modification	.24	.12	.13	2.03	.043
V	Relapse	-.19	.13	.009	1.40	.160
VI	Withdrawal	.04	.12	.02	.36	.716
VII	Confidence	-.54	.12	-.30	-4.41	.000
VIII	Problems	.11	.12	.06	.92	.355
IX	Total Game Addiction Scales	13.87	1.17		11.82	.000

Note. R=. 303 R^2= .092

Table 5 represents outcome of linear regression analysis with game addiction and its subscales as predictor and social functioning as an outcome variable. Results indicate that game addiction and its subscales explain 9% of variance in social functioning *F=* (4.210) = 40.51, *p<.001* and significantly predicts social functioning t = (292) 11.82, p< .001. Results showed that game addiction subscale of confidence and tolerance negatively predicts social functioning whereas, other subscales of game addiction positively predicts social functioning among adolescents. Moreover, only confidence subscale significant predictors of social functioning.

Table 5: *Simple Linear Regression showing Gaming Experience (Independent variable) as Predictor of Academic Motivation (Dependent Variable) (N=300)*

	Variables	Academic Motivation (Outcome)				
	Predictors	B	SEB	β	t	p
	Constant	45.56	2.33		19.53	.000
I	Accommodation	.09	.27	.06	.33	.001
II	Challenge	.02	.13	.05	.04	.001
III	Competition	.02	.33	.01	.05	.000
IV	Guided	.31	.35	.18	.89	.000
V	Immersion	-.43	.24	-.31	-1.79	.000
VI	Playfulness	.34	.28	.25	1.19	.000
VII	Social Experience	-.27	.26	-.18	-1.03	.000

VIII	Total Game Full Experience Scale	.14	.19	.63	.70	.000

Note. R= .685 R² = .470

Table 6 represents outcome of linear regression analysis with gaming experience and its subscales as predictor and academic motivation as an outcome variable. Results indicate that gaming experience and its subscales explain 4.7% of variance in academic motivation $F= (36.93) = 36.53$, *p<.001* and significantly predicts social functioning $t = (292) 19.53$, *p< .001*. Results showed that gaming experience and its subscale of positively predicts academic motivation whereas, all variables are significant predictors of academic motivation.

Table 6:   *Mean, Standard Deviations and t-values along gender on Game Addiction (N=300)*

	Variables	Male (n=150) M(SD)	Female (n=150) M(SD)	t	P	95% CI LL	UL	Cohen's d
I	Salience	6.98 (2.59)	7.12 (2.92)	-.43	.661	-.76	.48	-.14
II	Tolerance	6.84 (1.96)	7.20 (2.75)	-1.30	.193	-.90	.18	-.36
III	Mood Modification	7.30 (2.35)	7.76 (2.57)	-1.63	.103	-1.02	.09	-.46
IV	Relapse	7.54 (1.88)	7.56 (2.70)	-.09	.921	-.55	.50	-.02
V	Withdrawal	8.24 (1.97)	7.48 (2.89)	2.65	.008	.19	1.32	.76
VI	Confidence	7.48 (2.30)	6.83 (2.67)	3.85	.000	.54	1.68	1.11
VII	Problems	7.96 (2.16)	7.14 (2.80)	2.83	.005	.25	1.38	.82
VIII	T.GAS	6.98 (2.59)	7.12 (2.92)	-.43	.661	-.76	.48	-.14

df=198

Note. CI = Confidence Interval; *LL* = Lower Limit; *UL* = Upper Limit; GAS=Game Addiction Scale.

Table 7 indicates mean standard deviations and *t*-values on game addiction and its subscales. Analysis indicates significant mean differences only for Game Addiction *t (198) = -.43, p <.05.* Results indicate that males are higher on confidence as well as problems and withdrawal in comparison to females.

Table 7: *Mean, Standard Deviations and t-values along gender on positive Gaming Experience (N=300)*

Variables	Male (n=150) M(SD)	Female (n=150) M(SD)	t	P	95% CI LL	UL	Cohen's d
Accommodation	25.95 (12.11)	13.01 (13.21)	-6.87	.000	-12.93	-7.18	-10.06
Challenge	26.27 (11.79)	34.41 (12.72)	-5.74	.000	-10.92	-5.35	-8.14
Competition	22.27 (10.53)	30.87 (12.34)	-6.49	.000	-11.20	-5.99	-8.60
Guided	24.66 (10.11)	30.80 (10.93)	-5.05	.000	-8.53	-3.75	-6.14
Immersion	29.09 (12.25)	36.91 (13.77)	-5.19	.000	-10.78	-4.85	-7.82
Playfulness	29.91 (13.36)	38.20 (13.87)	-5.27	.000	-11.38	-5.19	-8.29
Social Experience	25.34 (11.43)	33.58 (12.92)	-5.84	.000	-11.01	-5.46	.8.24
T.GES	183.50 (78.12)	240.80 (83.22)	-6.14	.000	-75.64	-38.95	-57.30

df= 298

Note. CI = Confidence Interval; *LL* = Lower Limit; *UL* = Upper Limit; GES=Game Full Experience Scale.

Table 8 shows mean standard deviation and *t*-values on gaming experience and its subscales. Analysis indicates significant mean differences only for Gaming Experience *t (298) = -6.87, p <.05.* Results indicate that males having positive gaming experience than females.

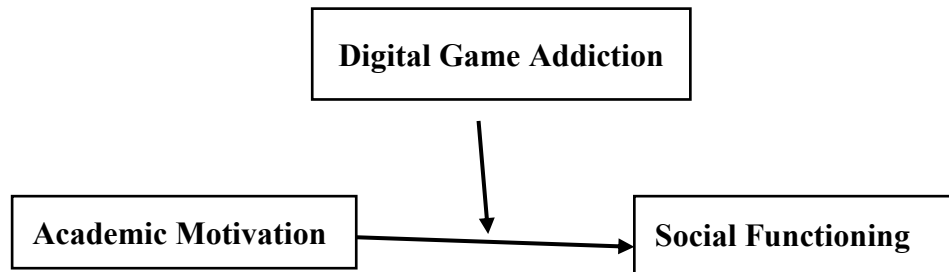Conceptual Framework: Moderation Analysis

Figure1: Model indicating digital game addiction as the moderator between academic motivation and social functioning

Table 8:　　*Moderating effect of Game Addiction (Moderator) on Academic Motivation (Independent Variable) and Social Functioning (Dependent Variable) (N=300)*

	β	SEB	t	p	95% CI LL	UL
Constant	13.99	.26	54.14	.000	13.48	14.50
Academic Motivation Y	.06	.02	4.01	.000	.03	.09
Game Addiction X	-.03	.11	-.36	.718	-.24	.17
Y× X	.01	.01	1.74	.082	-.00	.02
R^2	.07					
ΔR^2	.01					

Note. **p < .01, *p < .05; *F(2,98)= 8.91*

Main Effect of Predictor. At the mean value of academic motivation there was a significant positive relationship between academic motivation and social functioning β=.06, *t*= 4.01*, p*<.001*, 95% BCaCI* (.03-.09).

Main effect of the moderator. At the mean value of the game addiction there was a significant negative relationship between game addiction and social functioning $\beta=-.03$ $t=-.36$, $p<.05$, 95%BCaCI (-.24-.17).

Interaction. There is a significant interaction between academic motivation and game addiction in predicting social functioning $\beta= .01$, $t=1.74$, $p>.05$, 95%BCa CI (-.00- .02). This indicates that relationship between academic motivation and social functioning is conditional upon game addiction.

Slope analysis of moderation. Results of slope analysis indicates when game addiction is low (-1SD) there is insignificant positive relationship between academic motivation and social functioning $\beta= 0.04$, $t=1.74$, $p> .083$, 95% BCaCI (-.01-.09) at the mean of game addiction there is significant positive relationship between academic motivation and social functioning $\beta=0.06$, $t=4.01$, $p<.001$, 95% BCaCI (.03-.09).Moreover, at higher level of academic motivation (+1SD) there is also significant positive relationship between academic motivation and social functioning $\beta= .09$, $t=4.86$, $p<.001$, 95% BCaCI (.05- .12).Therefore, we can conclude that game addiction significantly moderates the relationship between academic modification and social functioning and it shows that at the higher level of gaming addiction, academic motivation is related with better social functioning. Following mod graph visually demonstrates this moderating role of game addiction

Digital Game Addiction as the moderator between Academic Motivation and Social Functioning
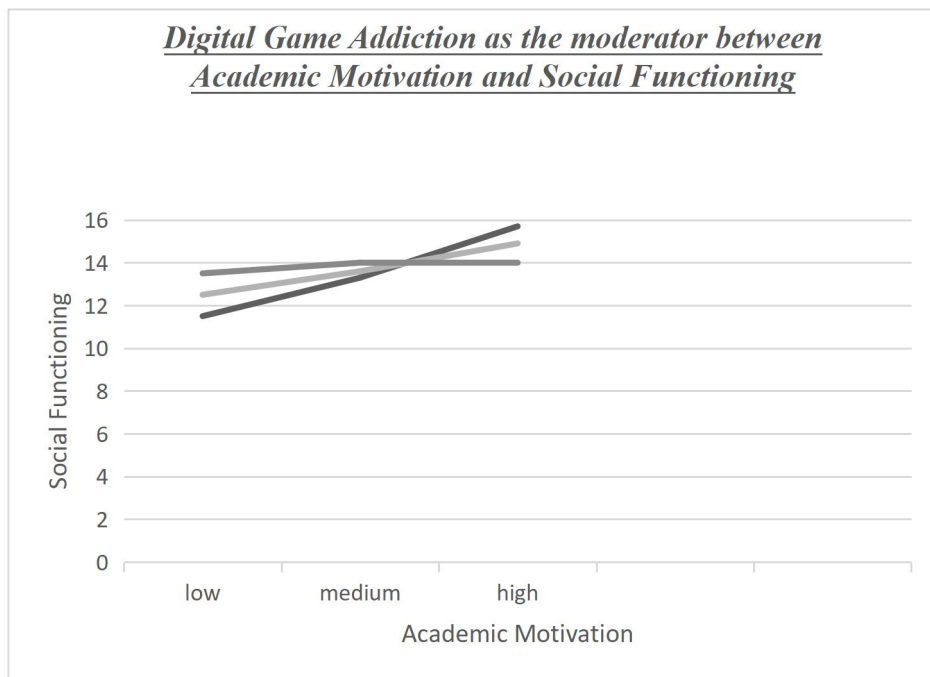
Discussion

The current study was carried out to test the associations between academic motivation and social functioning among students having game addiction. Results indicated that game addiction are higher among males than females. Similar result in literature Jeoung and Kim (2011). Findings proved that males' plays more games than females. The 2nd hypothesis "Male have positive gaming experience than females". Results supported this hypothesis. Literature provides the evidence for this assumption Bonanno and Kommers, (2008). Findings proved that males have positive gaming behavior than females.

The 3rd hypothesis "There is a positive relationship between positive games experience and academic motivation". Findings indicated that positive gaming experience positively correlated with academic motivation. These results are in line with past research Ching-Hsue and Chung-Ho Su (2012). Game base learning combined with educational and informational technology. In game base learning, content is mapped into the game repeated self-learning, on-going interaction and feedback can increase learning interest and motivation. It showed that game base learning are better than those who used to face to face relation.

The 4th hypothesis "There is negative relationship between gaming addiction and academic motivation". It was hypothesized that different subscale of Game Addiction scale (i.e. salience, tolerance, mood modification and relapse) will be positively correlated with academic motivation because theses subscales give positive impact on academic motivation. But subscales of withdrawal and problems negatively correlated with academic motivation. Findings Support the hypothesis according to previous research (Sahin, Gumus and Sezen, 2014). Result showed that only one sub-scale of GAS, relapse was positively co-related with achievement. Another research supported the result of this assumption (Ventura et al. 2012) demonstrated that those students who spend 11-50 hours playing digital games get higher marks than those who do not playing games. The 5th hypothesis "Gaming experience positively predicts academic motivation". Results showed that gaming experience significantly predicts academic motivation. Previous research supported this hypothesis (Douglas B. Clark et al., 2015). Result revealed that game enhanced the students' learning. It indicated significant advantages related with educational game design.

The 6th hypothesis "Game experience positively predicts social functioning". The results also indicated that people have positive gaming experience perform better in society. Similar research finding in literature (Cigdem Uz & Kursat Cagiltay 2015). Findings proved that gamers did not discuss personal life issues with online friends. People who spend more hours in a week for playing games had scored higher in extraversion characteristic. The 7th hypothesis "Games addiction negatively predicts social functioning". Result represented that some aspect of game addiction positively predicts social functioning and some aspect negatively predict social functioning. Reason behind this some addictive individuals have ability to perform in society but do not have ability to take decision.

The 7th hypothesis "Game addiction moderate the relationship between social functioning and academic motivation". Results indicated that game addiction significantly moderate the relationship among social functioning and academic motivation. Result also supported this assumption in literature (Regina Van Den Eijnden et al., 2018). Results showed that heavy use of game negatively impact on adolescent life satisfaction and perceive social competence and decrease school performance. Chen et al., 2004 were investigated the relationship among academic motivation and social functioning. Those who have social and cooperative these are helping in academic activities and projects. Kinder man et al., 1995 were reported that social group may facilitate the social supports for solving academic problems. Antisocial people face trouble in handling internal academic motivation. Moreover, Liu and Peng, 2009 were examined the game addiction and social functioning. Digital game is one of the addictive events on internet especially multiuser online games which do not require playing games but also provide social connection with others. Research indicated that game addiction associated with social functioning. Those who had alone and depressed are playing more digital games. Friendly people more want to play games for social attachment than unfriendly people do not social functioning properly (Kuss & Griffiths, 2011).

Limitations

There are some limitations of the current study. Firstly, most of data collected online because almost all institutes were closed, and it was very difficult to approach School and College students. Secondly, data was collected only from two cities of Pakistan (i.e. Rawalpindi and Islamabad) which may limit the external validity and generalizability of the research findings. Secondly, results revealed that some subscales of game addiction did not negatively predict the social functioning. Because participants were different category of education such as matric and intermediate and have different level of social functioning.

Suggestion and Recommendations

The current research has some restriction that are essential to study while estimating study conclusions and must be addressed when approved in future. Firstly, data will be collected from different cities of Pakistan. Secondly, data will be collected different wider age range of students such as children and adults. A more representative sample is required.

Conclusion

Findings of the study revealed that gaming experience positively predicts social functioning and academic motivation among students. Game addiction moderated the relationship between academic motivation and social functioning among students. Gender differences revealed that males play more games as compared to females.

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