Role of internet gaming behaviors and test anxiety on emotional intelligence, subjective happiness and academic achievement among adolescent school students

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ABSTRACT

The aim of the study was to show how excessive behaviours in internet gaming and test anxiety hamper emotional intelligence, subjective happiness and academic achievement among 12th grade students. Initially students were matched in terms of the different study criteria and then selected participants were administered with the study tools. Results indicated that low and high gamers and students with low and high test anxiety significantly differed in terms of the study variables. Significant differences also obtained when high and low test anxiety groups were compared in terms of relationship of the variables of emotional intelligence with subjective happiness.

Keywords
Emotional Intelligence, test anxiety, gaming behaviours, academic achievement, subjective happiness.

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Introduction

Traditional to the recent advancement the concept of intelligence was developed, modified and redeveloped by the various theorists (Cattell, 1963; Gardner, 1983; Spearman, 1927; Sternberg, 1985; Thurston, 1938) Defining intelligence on the basis of composite abilities in different dimensions of life is actually a tricky task. A global definition of intelligence was proposed by Neisser et al. (1996) as "individuals' abilities to understand complex ideas, to adapt effectively to the environment, to learn from experience, to engage in various forms of reasoning, to overcome obstacles by careful thought." In spite of all these positive attempts, measurement of intelligence still lacked behind to hold up these theoretical advancements as traditionally experts from various disciplines used to measure intelligence on the basis of IQ, but unfortunately such approach failed to consider very important personality characteristics (Goleman, 1995). A significant feature of this study is emotional intelligence which came into focus whenever individuals lack behind in different aspects of their life in spite of being contented with sufficient intellectual capacity. Initially, the term emotional intelligence was proposed by Salovey and Mayer (1990).

The idea of emotional intelligence was laid down in Gardner's theory of multiple intelligence where inter- and intra- personal intelligences were reconceptualized under a much broader concept of emotional intelligence and simultaneously this concept had arrived with a comprehensive structure (Bar-On, 1997a). This notion had been popularized by the phases of work done by Goleman in this area. He described emotional intelligence as one which helps in knowing and managing one's emotions, ability to motivate others and ability to successfully handle relationship. Later Bar-On (1997b) broadened its conceptual framework by incorporating various personality characteristics such as empathy, motivation, persistence, social skills, and warmth. Actually, he contributed the phrase 'Emotional Quotient' (EQ) which is the measure of emotional intelligence.

Emotional intelligence may results in facilitating various kinds of adolescent behavioral patterns; among them rapid uses of internet for online gaming had been revealed as one of the most favorite leisure activities (Seo, Kang & Chae, 2012). Prevalence of online gaming varies among countries such as 3% in Netherlands, 9% in Singapore but the rate was comparatively much higher in Korea such as 14.6% (Seo et al., 2012). Studies indicated that such kind of gaming behaviors provide them with the feeling of belongingness, pleasure of achievements and most significantly it provides them relief from stresses of hectic daily life schedule (Seo, Kang & Yom,

2009). However, studies further indicated that excessive gaming behavior in most of the cases may lead to addiction which interferes with health development as well as creates malfunctioning in personal and social areas of life like hampers relationship with family, friends, their academic growth and others (Malakar, Chakraborty & Sanyal, 2019). Che et al. (2017) conducted a study on adolescents regarding the relationship of different aspects of emotional intelligence and online gaming through perceived self efficacy and perceived helplessness. Results showed that some dimensions of emotional intelligence such as self-management and emotion utilization, as correlated with online gaming behaviors were mediated by perceived helplessness and another side of the coin had also been revealed as other dimensions of emotional intelligence such as self-management, social skills, and empathy, as correlated with online gaming behaviors, were mediated by perceived self-efficacy. Overall, these studies showed that controlled behaviors in terms of online gaming may reward the individuals with the development of some of the healthy behavioral patterns which in most of the cases result in positive personality development (Seo et al., 2012).

In marks based education system, the major determiner of academic incompetency is insufficient obtained marks in examination which has many possibilities that the students will ponder into a situation which will lead to in favor of being poorly adjusted not only to those subjects of his/her discipline but to the overall environment of the academic sphere (Malakar, 2019).Therefore, academic achievement which is one of the most significant variables of this study may be conceptualized as the proficiency levels that student able to attend in their academic work or their different school subjects (Kohli, 1975). Studies showed that People with emotional competence and maturity get rewarded with favorable outcomes in academic areas in the way of their career and hence, academic achievement gets favorably influenced by the individuals' level of emotional intelligence (Ramana, 2018). And on the other side, poor learning and management skills may leave the students in the world of insecurity which are in many instances associated with worry, dread, fear of failure and somatic disturbances. In academic sphere these disturbances are having higher probabilities to manifest in students test taking behavior which in most of the cases hinder their performances in examination (Andrews & Wilding, 2004). Recently an interesting study conducted by Thomas, Cassady and Heller (2017) to identify the factors which influence students' academic performances. Results indicated that students with cognitive test anxiety and emotion focused copping had experienced with decreased in their four year grade point average (GPA). This study emphasized the necessities to develop various intervention strategies that will strengthen these students emotionally by enhancing their self regulation and emotion regulation skills. In the similar line recently Malakar (2019) published a study in a conference proceeding and there he showed that adolescent students having lower test anxiety performed well in the examination and they were also revealed to have higher association between general and emotional intelligence.

Overall, on the basis of the findings of recent and earlier research studies, a general statement may be drawn that emotional intelligence if evolved to be a positive personality construct, is expected to develop the individuals with emotional competence and maturity. Such kind of growth and development possibly in many occasions will result to enhance positive psycho-social functioning (like growth in academics, socio-cultural and other functional areas) that in turn is often expected to result in growth and wellbeing of the society as well. In this regard an important study may be highlighted as conducted by Bar-on (2006) on the role of emotional intelligence on subjective wellbeing. Most interestingly, this study findings showed that emotional intelligence strengthens peoples' various individual as well as global functional areas and also provides satisfaction in those areas where people is currently engaged in (Bar-On, 2006).

Purpose of the present study

This study was conducted because in recent year researches in behavioral studies showed that though some of the students who do have sufficient level of intelligence but still their level of academic achievement gets reduced because of their poor capacities to control or manage various psychological functioning which are emotional in

nature (Malakar & Basu, 2017; Malakar, Basu & Choudhuri, 2009). As we all know that the purpose of education is to empower the students with good thoughts, ideas and behaviors which will lead them to serve themselves as well as their Nation. Development of positive emotional functioning will enable students to do careful analysis while making life decisions. Therefore, results of this study will probably be helpful in finding new pathways where compact learning will be imparted to combat with life stressors, so that their overall development will surely influence their output in positive directions.

Methods

This study is an original work and in conducting this, author has considered and maintained necessary ethical concern. The different research methods are as follows-

Hypotheses

The hypotheses of the study are-

Hypothesis1: There exists no significant difference between low and high internet gamers in terms of emotional intelligence.

Hypothesis2: There exists no significant difference between low and high internet gamers in terms of percentage of total marks in secondary level examination.

Hypothesis3: There exists no significant difference between low and high internet gamers in terms of subjective happiness.

Hypothesis4: There exists no significant difference between two groups (students with low and high test anxiety) in terms of emotional intelligence.

Hypothesis5: There exists no significant difference between two groups (students with low and high test anxiety) in terms of percentage of total marks in secondary level examination.

Hypothesis6: There exists no significant difference between two groups (students with low and high test anxiety) in terms of subjective happiness.

Hypothesis7: There exists no significant difference between two groups (students with low and high test anxiety) in terms of the relationship of different variables of emotional intelligence with subjective happiness.

Participants

The study participants were 12th grade school students (16 to 18 years of age) from Kolkata with middle class family background. The total number of respondents was initially 250, but finally reduced to 186 to comply with research criteria (inclusion and exclusion criteria) and formation of groups. Initially for formation of groups, participants were administered with IGD-20 (cut-off of 71 out of 100 points, to differentiate between high and low internet gamers) and TAQ (score that exceeds 35 indicates an unhealthy level of test anxiety). Based on the scores of these tests, groups were formed such as high and low internet gamers as well as students with high and low test anxiety.

Tools

For data collection initially an information schedule was formed for collecting information on different demographic and non demographic variables.

The Schutte Self Report Emotional Intelligence Test was used to assess the level of emotional intelligence. This test is contended with sufficient reliability and validity. This test is self administered and can be administered in few minutes (Schutte et al., 1998).

Internet Gaming Disorder Test (IGD-20 Test) by Pontes, Kiraly, Demetrovics, and Griffiths (2014) was used to assess individuals' both online and offline gaming disorders in 12 months period. This test has 20 items and respondents are required to respond on 5-point Likert scale. This test is also psychometrically sound with good amount of reliability and validity. This self administered test can be administered within few minutes.

Subjective Happiness Scale by Lyubomirsky and Lepper, (1999) was used to measure the level of

happiness in students. This scale consists of four items and responses are to be given in equal appearing interval scale ranging from 0 to 8. This scale is also psychometrically sound with good amount of reliability and validity. It is a self administered test and takes only few minutes to administer.

Test Anxiety Questionnaire by Nist and Diehl (1990) was used to measure the level of test anxieties in students. This questionnaire consists of ten items and responses of each item are given within these subcategories such as 'Never' (1), Rarely' (2), 'Sometimes' (3), 'Often' (4) and 'Always (5). This test is consisted with fare amount of reliability and validity. This is a self administered test and can be administered within few minutes.

Measures of academic achievement to assess what students have done independently after classroom lessons. Students' achievement level was measured from achievement (percentage of total marks) in secondary level board examination.

Procedure and analysis

Initially to conduct this work, permission was taken from the authorities and consent was taken from students. Thereafter, tests were administered. On the basis of the results of IGT-20 and TAQ, groups (high and low gamers in terms of IGD-20 and students' groups with high and low test anxiety in terms of TAQ) were formed. Thereafter descriptive, correlational and inferential (ANOVA and z-test) statistics were used for analysis. Results beyond the a-priori alpha level of .05 were considered as significant.

Results

After formation of groups, the study hypotheses were tested and to test hypotheses 1 to 6, univariate analysis of variance was conducted. Results were presented in Table -1and 2.

Table-1. Means and SDs of scores for the two groups of low and high gamers (1,2) and other two groups of low and high test anxiety (3,4) for Emotional Intelligence (E.I.), Subjective Happiness (S.H.) and Academic Achievement (A.A.)

	Groups (1,2)	Groups (3.4)	Mean	S.D.	N
E.I.	Low	Low	144.18	9.27	50
		High	114.21	6.03	42
	High	Low	136.34	12.13	41
		High	113.57	6.28	53
S.H.	Low	Low	25.36	2.47	50
		High	13.38	3.22	42
	High	Low	23.19	3.38	41
		High	11.64	1.36	53
A.A.	Low	Low	73.29	9.39	50
		High	59.11	7.17	42
	High	Low	66.16	11.77	41
		High	51.30	4.22	53

Results reveal that for high and low gamers the mean emotional intelligence, academic achievement and subjective happiness scores were higher for students with low test anxiety. In all the cases compare to the high gamers, these mean values were also higher for low gamers.

Table–2. Results of Univariate Analyses to determine the effects of Group1, 2 (low and high in terms of gaming behaviors) and Group3.4 (low and high in terms of test anxiety) and their interaction on academic achievement and subjective happiness (df 1, 182)

Source	Dependent Variable	F	Effect Size
Group1,2	Emotional Intelligence	11.04*	.06
Group3.4	Emotional Intelligence	426.20*	.70
Interaction	Emotional Intelligence	7.92*	.04
Group1,2	Happiness	24.89*	.12
Group3,4	Happiness	904.33*	.83
Interaction	Happiness	.30	.00
Group1,2	Achievement	36.16*	.17
Group3,4	Achievement	136.64*	.43
Interaction	Achievement	.07	.00

***Significant beyond the a-priori alpha level of .05**

Results reveal that significant differences obtained between high and low gamers (group1) and also between students of high and low test anxiety (group2) in emotional intelligence, academic achievement and subjective happiness but interaction effect of group1 and group2 was only

obtained to be significant for emotional intelligence.

Thus Hypotheses 1, 2, 3, 4, 5 and 6 were rejected.

To test hypothesis seven, correlations (Pearson 'r') of the variables of emotional intelligence with subjective happiness were calculated and z-tests were conducted for group differences in terms of the relationship of these variables. Results were presented in table-3

Table–3. Pearson's 'r' between the variables of Emotional Intelligence with subjective happiness on the basis of which obtained differences between the groups of low and high test anxiety through Fisher's Z values

Variables	Low group (r)	High group (r)	Z-values
Perception of emotion	.51*	-.05	3.64*
Managing Own emotion	.36*	.02	2.57*
Managing Others emotion	.56*	.09	3.86*
Utilization of emotion	.56*	.06	4.07*
Total	.62*	.04	4.93*

***Significant beyond the a-priori alpha level of .05**

Results indicated that for students with low test anxiety all the variables of emotional intelligence were positively and significantly correlated with subjective happiness. In terms of the relationship of the variables of emotional intelligence with subjective happiness, the differences between low and high groups were significant for all the variables of emotional intelligence.

Thus hypothesis 7 was rejected.

Discussions

The hypotheses of the study and applied statistical measures were selected based on the objectives of the study. Hypotheses one to six all were rejected based on the findings which disfavored these because obtained results showed that both the study groups such as low versus high online gamers as well as students with low versus high test anxiety significantly differed in terms of emotional intelligence, academic achievement and subjective happiness. These findings have been corroborated by the findings of both previous and most recent researches. In 2012, a correlational study which had been conducted on adolescents by Seo, Kang and Chae, (2012). Findings revealed that emotional competence is negatively correlated with excessive online gaming behavior and in comparison to the general users, emotional competence decreases high risk for developing addictive behavior in excessive users. Recently in India another study in the almost similar line was conducted by malakar, Chakraborty and Sanyal (2019). Their findings too like the previous one indicated overall poor psychological functioning as associated with excessive gaming behaviors that high gamers significantly differed from the low gamers both in terms of the development of anxiety and depression. Therefore, findings of these researches indicate that urgency should be developed among parents and the authorities of the different schools and colleges that necessary psychological measures need to be developed to combat with such maladaptive behaviors. The other part of the study findings also showed that the other two groups of low and high test anxiety differed in terms of emotional intelligence, academic achievement and subjective happiness. In discussing these findings again very recent study conducted by Malakar (2019) may be highlighted and results showed that students with high and low test anxiety differed in terms of academic achievement and the relationship between general intelligence and emotional intelligence. In 2016, in the similar area Steinmayr, Credel, McElvany and Wirthwein (2016) showed that test anxiety negatively predicted social wellbeing whereas academic achievement positively predicted social wellbeing. On the basis of such discussions, a general awareness needs to be created among teachers and the school authorities for developing necessary measures by joining hands of teachers and counselors that students should feel free to express and can utilize their best potentials for themselves as well as the society.

The final study hypothesis which was also rejected because here again the students group of

low and high test anxiety differed in terms of the relationship of all the variables of emotional intelligence with subjective happiness. The reason may be that emotional intelligence and happiness go hand in hand and thus, emotionally competent people are able to utilize their important resources in such a realistic way that in turn results in developing them to be more productive and contented. Research findings in this area may be discussed in support of the present study for developing an overall comprehensive picture. Ghahramani, Jahromi, Khoshsoroor, Seifooripour, and Sepehrpoor (2019) in a very recent year conducted a study on the relationship between emotional intelligence and happiness with students group and there it was revealed that emotional intelligence is a predictive factor for happiness among students. Another study in more or less similar line was conducted by Szczygieł and Mikolajczak (2017) and there too they showed that trait emotional intelligence promotes students wellbeing that in turn enhances positive emotional regulations. Again study by Malakar (2019) may also be highlighted in this regard and there he also showed that relation between general and emotional intelligence is much higher among students with low test anxiety. Overall, on the basis of the findings of all these recent studies which corroborated the present study findings, it is clearly evident that emotional intelligence imparts the individuals with positive traits such as self awareness, empathy and other important social skills which develop them to be happy as well as emotionally contented that they contribute for the wellbeing of themselves as well as society.

Conclusions, limitations and implications

From this study, it may be concluded that excessive internet gaming behavior in many instances may turn into the development of behavioral addictions which may hamper individuals' personal and social functioning as well as his or her overall wellbeing. This study further concludes that emotional incompetency may disrupts the overall development which leads the students to be a kind of future grown up person who possibly in many respect will fail to deliver for themselves as well as for the society in long run. This study has limitations in the following areas like larger number of students should be involved as study participants, study tools were only self reporting inventories which possibly included self reporting biases, selection of the participants was biased and selection criteria were not so broad. Despite of such limitations, this study most significantly showed that positive emotional growth and functioning not only favor individuals in their various specialized functional areas but their overall growth and functioning may be enhanced and therefore, they will have ample opportunities to turn them with positive personality development. Considering the social significance of this study, the author recommends that in future a research in the similar direction may be conducted by including broad areas with larger study group and more number of study variables and till to that we await.

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