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Measurement of Delay of Gratification among Indian Students of Creative Courses

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Abstract

The present study aims at studying the Delay of Gratification in studies among students of creative courses i.e., fashion designing, journalism and fine arts. The instrument used to measure the delay of gratification in academics was delay of gratification in studies scale constructed by "Bembenutty and Karabenick (1996)". Sample subjects of the study included 150 students (91 girls and 63 boys) who voluntarily agreed to participate in the study. For data analysis, mean, standard deviation, standard error and point-biserial correlation coefficient are used as measures under descriptive statistics. Under inferential statistics, t-test and F-test are used to find the significance of results for level of significance α=0.05. The study results reveal poor and non-significant correlation between gender and academic delay of gratification in creative students. No significant difference is found neither in the construct nor in its 10 items with respect to gender. Due to skewed nature of the data, found using Kolmogorov-Smirnov and Shapiro-Wilk tests, and violation of tau-equivalence, found using SMART PLS 2.0, the greatest lower bound reliability is chosen to report the confidence interval type reliability between (0.895,1). Cronbach's alpha reliability is found to be at 0.79, underestimating the true reliability by 11.73%. McDonald's Omega coefficient is 0.784, which implied that a unit variance in the construct brought 78.4 % variance in the 10 items measuring it and establishes construct validity. The ramifications are of the results are presented.

Keywords: "Academic Delay of Gratification", "Academic Delay of Gratification Scale", "Creative courses".

Introduction

The ability to remain perseverant, focused and patient in seeking a higher goal in life instead of settling for less is a hallmark trait present in ambitious individuals. These people display willpower when faced with obstacles and temptations in the path to success. But, several individuals lose their nerves and end-up compromising with the lesser rewards. In psychology, this ability is studied as a construct, known as delay of gratification. Seminal work on this variable was initiated by Dr. Walter

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Mischel in late 1960s, who defined delay of gratification as "people's attempts to delay immediate smaller gratification for the sake of more desirable but distant goals" (Mischel, 1981, p. 244). The reason for the individual differences in display of delay of gratification was explained by using the hot-cool framework or interacting system (Metcalfe and Mischel, 1999). While the people displaying delay of gratification possess a cool cognitive system actively involved in thinking, the rest display impulsiveness owing to an over-active hot emotional system which triggers expression of feelings instantly. This system is also known as the know-go system. The go system is simple, emotional, fast, develops early, is reflexive, controlled by stimulus and strengthens under stress. The know system is complex, cognitive, slow, develops late, is reflective, controlled by self and weakens under stress.

Though Mischel, Shoda and Peake (1988) found that display of delay of gratification in early childhood by children lead to higher academic achievement and becoming socially responsible in their adolescence, the academic analog of this construct was proposed by “Bembenutty and Karabenick (1996)” as delay of gratification in studies. They also prepared a tool called the academic delay of gratification scale to measure this construct in young psychology course students of a mid western university. The tool is the gold standard for measuring this construct and has been validated and administered in cultures like Japanese (Nakanishi, Nakaya and Nakanishi, 2015), Spanish (Villarroel, 2008), Chinese (King and Du, 2011), Persian (Arabzadeh et.al.,2012), Egyptian (El-Fattah and Salman, 2017), Korean (Bembenutty, 2004), Filipino (Ganotice Jr. and King, 2014), and Indian (Chakraborty,.R., 2017). Academic delay of gratification is defined as “willingness to forgo an immediately available option, in favor of a delayed alternative, in order to secure temporarily distant academic rewards, goals, and intentions” (Bembenutty, and Karabenick, 1998).

The reflective and impulsivity aspects of delay of gratification have their psychological parallel in the display of another construct, the creativity. Creative people produce worthy ideas, new and practical tasks, or have a one of its kind talent to use imagination and present a new perspective to an otherwise routine aspect (Rogers, 1954; Ausubel, 1963; Amabile, 1996; Lubart, 1994; Onda, 1994a; National Advisory Committee on Creative and Cultural Education, UK (NACCCE), 1999; Boden, 2001; Zabelina & Robinson, 2010). Al Soulami (2004) and Olaseinde (1994) found that reflective students displayed more creativity when compared to impulsive students and gender had no role to play in this finding. Reflective students were deliberate and fastidious in their response, and the impulsive students responded faster with lack of accuracy (Gullo, 1988; Kagan, 1966; Yu, 1997). Impulsivity also leads to reckless actions with uncontrolled and unpredictable behavior (Cyders et al., 2007).

Owing to the existence of the psychological commonality of impulsiveness between creativity and gratification delay in academics, the present study is conducted to measure the presence of

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academic delay of gratification construct in university students pursuing creative courses like fine arts, fashion designing and journalism in the Indian context. The role of gender on this construct among the creative students is especially looked for in this study. Bembenutty (2007) reported no role of gender on delay of gratification in academics in undergraduate psychology course students from the United States. Previous studies of the researcher involved measurement of this construct in engineering, pharmacy, law and education professional undergraduate and postgraduate courses students (Chakraborty, .R., 2017).

Method:

Sample:

The sample of the study comprised of 154 students (91 girls and 63 boys) from fine arts (54 students), fashion designing (51 students) and journalism and mass communication (49 students) courses with the average age being 20.8 years. The study was conducted on the last week of April 2018 at classrooms of the mentioned departments in "Lovely Professional University, Phagwara, Punjab, India". These creative courses students were selected using simple random sampling technique.

Measure:

The "academic delay of gratification scale" prepared by "Bembenutty and Karabenick" consists of 10 items, comprising of two statements each. While the first option presents a scenario involving instant gratification, the second option presents a situation consisting of delay in academic gratification. The subjects present their respones on a four point Likert scale with options "Definitely choose A =1, Probably choose B = 2, Probably choose C = 3 and Definitely choose D =4". The scores vary between 10 to 40. The higher the score, more is the existance of the construct in the subject. Originally, the authors of the tool reported the tool's Cronbach's alpha to be 0.7 and presence of construct validity.

Procedure:

The researcher conducted the data collection through proper channel. Permissions were taken from head of the departments to allow the collection of data during class sessions to maintain proper conditions of test administration. The researchers themselves visited the department classrooms and sought the help of the faculty taking the class in data collection. The purpose of visit and instructions to follow were clearly explained to the students and cooperation was sought from them. The delay of gratification in academics measurement scale items were entered into a Google form sheet for the collection of data and a link using "Tinyurl" website was created and shared with the students. The students took approximately 15 minutes to complete responding the items in the tool by visiting the website through the link provided in their mobile phones. The google application presented the responses of the subjects in the form of excel file, easily downloadable in any system.

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The collected data was analyzed using SPSS Statistics Ver.23 for finding the measures of descriptive and inferential statistics. These measures included mean, standard deviation, standard error, point-biserial correlation coefficient, normality test (Kolmogorov-Smirmov test and Shapiro-Wilk's test), t-test and F-test. FACTOR software (Lorenzo-Seva, & Ferrando, 2006, 2013) was used to find greatest lower bound reliability (Woodhouse and Jackson, 1977), Cronbach's alpha and McDonald's omega coefficient.

Results:

Table 1: Point-biserial Correlation Coefficient between Gender and Academic Delay of Gratification

Point –biserial Correlation	**Gender**	**ADG**
Gender	1	-0.082
Sig.(2-tailed)		0.314
N	154	154
ADG	-0.082	1
Sig.(2-tailed)	0.314	
N	154	154

Interpretation: There is no association between gender and academic delay of gratification in students from creative courses. It is because the point-biserial coefficient magnitude is very weak at -0.082. Moreover, the result is non-significant as the p-value is at 0,314 and greater than 0.05.

Table 2: Descriptive Statistics of the Academic Delay of Gratification Construct

Mean	**Standard Deviation**	**Standard Error**	**N**
2.7383	0.53739	0.04330	154

Interpretation: The sample comprising of 154 creative courses students have the construct in them as the measure of central tendency of the sample, mean, is 2.7383 and greater than the mean of the scale, score 2.

Table 3: Inferential Statistics of the Academic Delay of Gratification Construct on Gender:

	Gender	**N**	**Mean**	**S.D.**	**S.E.**	**t-cal**	**df**	**Sig.**
ADG	Boys	91	2.7747	0.53429	0.05601	1.011	152	0.314
	Girls	63	2.6857	0.54176	0.06826			

Interpretation: The difference in the mean of academic delay of gratification construct in boys and girls is not significant at α=0.05 level of significance as obtained p-value 0.314 is greater than the

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benchmark 0.05. It implies that gender of the creative student plays no role in determining the presence of construct in him or her.

Table 4: Academic Delay of Gratification with respect to Creative Courses

Course	N	Mean	St. Deviation	St. Error	df	F-cal	Sig.
Fine Arts	54	2.6593	0.51046	0.06947	(2,151)	1.294	0.277
Journalism	49	2.7327	0.54673	0.07810			
Fashion	51	2.7383	0.55284	0.07741			

Interpretation: Creative students from all the three courses of creativity have no significant difference among themselves with respect to delay of gratification in academics as the result of the F-test is non-significant at level of significance $\alpha=0.05$, for $n=154$ and $df=(2, 151)$.

Table 5: Tests of Normality

	"Kolmogorov-Smirnov"			"Shapiro-Wilk"		
	Statistic	df	Sig.	Statistic	df	Sig.
ADGS	0.109	154	0.000	0.969	154	0.001

Interpretation: Both, Kolmogorov-Smirnov test and Shapiro-Wilk test assume the data to be normal. Obtaining a significant result, implies, null hypothesis is rejected and acceptance of the alternate hypothesis that the data is skewed.

Table 6: Violation of Assumption of Tau-equivalence

	Item	Factor Loading
ADG	1	-0.216
	2	-0.642
	3	0.691
	4	0.741
	5	0.624
	6	0.721
	7	0.267
	8	0.532
	9	0.74
	10	0.52

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Interpretation: The factor loadings of the 10 items on the construct delay of gratification in academics are found to be unequal. This is violation of the assumption of tau-equivalence (Cronbach, 1951).It can lead to underestimation of the true reliability of the scale (Raykov, 2007, Graham,2006). The results are obtained using SMART PLS 2.0 software, which is helpful in conducting structural equation modeling when the sample size is small and non-normal in nature.

Table 7: Estimation of Psychometric Properties of the Scale:

S.No.	Type of Reliability	Measure
1.	Cronbach's Alpha	0.79
2.	Greatest Lower Bound	(0.895,1)
3.	Mc Donald's Coefficient	0.784

Interpretation: Reliability of scores changes as a measure when the same tool is administered on subjects of different samples (Guilford and Fruchter, 1978, p. 431). It means that though the authors of the tool reported it to possess Cronbach's alpha of 0.7, it becomes incumbent on every researcher administering the tool on subjects of a new sample to calculate the reliability afresh. One of the conditions for applying Cronbach's alpha is normality of data. The data in the present study is skewed. Though Cronbach's alpha is reported to be 0.79 in this study, it is recorded in the literature of psychometric that under the violation of normality and tau-equivalence conditions (Green and Yang, 2009a), this measure of reliability under-estimates the true reliability somewhere between 0.6 – 11.1% based on the seriousness of the violation (Green and Yang, 2009b). To deal with reliability reporting under conditions of tau-equivalence violation, Mc Donald's coefficient is used (Mc Donald, 2013). However, Mc Donald's coefficient is also a measure of construct validity (Zinbarg, Yovel, Revelle and Mc Donald, 2006). But, due to the skewness of the collected data, the reliability is reported using the greatest lower bound in terms of confidence interval, instead of a point estimator, at (0.895,1). It means that the tool's reliability under realistic conditions of data skewness, and violation of tau-equivalence lies for sure between the lower limit of 0.895 and the upper limit of 1. In this study, Cronbach's alpha underestimated the true reliability of the scale by 11.73%. Since the Mc Donald's coefficient obtained is 0.784, it means that a unit variance in academic delay of gratification construct brings about 78.4% variance in all the 10 items of the scale measuring it, establishing the construct validity, and hence the psychometric properties of the scale.

Discussion:

We live in a knowledge-driven and inter-connected world economy. People from across the globe are realizing the importance of sustained learning for remaining relevant in present times. As a result, the cohort group of college going students no more comprises of homogeneous subjects, but is

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increasingly becoming heterogeneous in nature. In this context, students from different disciplines need to commit themselves for longer years of study, and display academic delay of gratification. Achieving a bigger worthy goal and securing an advantageous position is becoming a norm from being an exception. But, heavy influence of information and communication technology and social media is increasing making the students of present generation seek and demand instant gratification. Impulsiveness is becoming the new normal, and affecting every perceivable aspect of academic life.

Also, the cost of pursuing higher education is increasing day by day, compelling the typical college or university going student to take up part-time job to finance his or her education, which leaves pursuing of studies which is highly self-regulating in nature. This again calls for the display of delay of gratification in academics.

Relevant to the above mentioned importance of higher education scenario and the role of today's student, the present study tried to measure the vital construct on a sample of creative students for whom display of restlessness or impulsivity proves to be a double whammy. It not only reduces creativity but also academic delay of gratification ability.

The bigger picture with respect to gender difference in creativity and academic delay of gratification remains obscure. Several studies claiming certain role and no role, are present in equal measures in the literature of these constructs. However, this study found the construct to be present in the subjects of the sample above average, without any role of gender or course type on it. This finding is especially heartening for the teaching community of the creative courses as they can now focus on the promotion of this variable to enhance self-regulation in creative students, without bothering about their gender or stream of the study.

Further studies involving measurement invariance studies on students from engineering, law, pharmacy, medicine, education, management and creativity can be conducted along with longitudinal studies in each of these disciplines, to find out the temporal stability of the scale in different courses. The role of culture on the construct can be explored in future studies to gain further insights and add them to the existing edifice of knowledge on creativity, academic delay of gratification and measurement invariance research.

Conclusion:

The present study was conducted based on the psychological underpinning that impulsiveness is detrimental in the display of both creativity and delay of gratification in academics. It measured the presence of the later construct in creative students and found it to be more than average in these students. No roles of gender and course of creativity on this vital construct of self – regulation were found in this study. However, this study must be replicated with higher sample sizes in different parts of the state of Punjab and in other parts of a culturally diverse nation like India.

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