EFFECT OF SELF-CONSCIOUSNESS OBN E-LEARNING ATTITUDES AMONG HIGH SCHOOL STUDENTS, HYDERABAD, INDIA

EFEITO DA AUTOCONSCIÊNCIA NAS ATITUDES DE E-LEARNING ENTRE ESTUDANTES DO ENSINO MÉDIO, HYDERABAD, ÍNDIA

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Abstract. The study looks at the relationship between E-Learning attitudes and self-consciousness among high school students studying in Hyderbad City, an Indian metropolis, during the 2022-2023 academic year. The study had a total of 578 students (305 males and 273 females). Participants were given the Test of E-Learning Related Attitudes (TeLRA) and the Self-Consciousness Scale. Data were analyzed using SPSS 29.0 software. Pearson correlation and multiple regression analyses were used to determine the predictive role of self-consciousness in E-Learning Attitudes. A positive link was discovered between "self-consciousness" and "E-Learning attitude" among high school students. To compare groups based on demographic characteristics, we performed ndependent sample t-tests and one-way ANOVA. Female students had a significantly higher E-Learning attitudes score than male students (t= -4.78; p<0.05). Students having a good educational background from their family had significantly higher E-Learning attitude scores than those without (t=3.4; p<0.001). There were no significant variations based on the technology used during E-Learning or other demographic characteristics. Female students scored considerably higher on private self-consciousness (t=-4.96; p<0.001), general self-consciousness (t=-6.37; p<0.001), and social anxiety (t=-8.57; p<0.001) than male students. Students with a family education history exhibited significantly higher general self-consciousness scores (t=2.39; p<0.05) compared to those without E-Learning experience. The results were discussed, and recommendations for further scientific study were made.t (t=3.4; p<0.001).

Keywords: Self-Consciousness, E-Learning Attitude, High School tudents, Adolescence

Resumo. O estudo analisa a relação entre atitudes de E-Learning e autoconsciência entre estudantes do ensino médio que estudam na cidade de Hyderbad, uma metrópole indiana, durante o ano acadêmico de 2022-2023. O estudo teve um total de 578 alunos (305 homens e 273 mulheres). Os participantes receberam o Teste de Atitudes Relacionadas ao E-Learning (TeLRA) e a Escala de Autoconsciência. Os dados foram analisados usando o software SPSS 29.0. A correlação de Pearson e as análises de regressão múltipla foram usadas para determinar o papel preditivo da autoconsciência nas Atitudes de E-Learning. Foi descoberta uma ligação positiva entre "autoconsciência" e "atitude de E-Learning" entre estudantes do ensino médio. Para comparar grupos com base em características demográficas, realizamos testes t de amostra independente e ANOVA unidirecional. As alunas tiveram uma pontuação significativamente maior em atitudes de E-Learning do que os alunos do sexo masculino (t = -4,78; p < 0,05). Alunos com boa formação educacional de sua família tiveram pontuações de atitude de E-Learning significativamente maiores do que aqueles sem (t=3,4; p<0,001). Não houve variações significativas com base na tecnologia usada durante o E-Learning ou outras características demográficas. Alunas pontuaram consideravelmente mais alto em autoconsciência privada (t=-4,96; p<0,001), autoconsciência geral (t=-6,37; p<0,001) e ansiedade social (t=-8,57; p<0,001) do que alunos do sexo masculino. Alunos com histórico educacional familiar exibiram pontuações de autoconsciência geral significativamente maiores (t=2,39; p<0,05) em comparação com aqueles sem experiência em E-Learning. Os resultados foram discutidos e recomendações para estudos científicos adicionais foram feitas.t (t=3,4; p<0,001).

Palavras-chave: Autoconsciência, Atitude de E-Learning, Alunos do Ensino Médio, Adolescência

1. INTRODUCTION

Remote/Online or E-Learning has become a new normal during Covid and Post-Covid pandemic periods. This non traditional method of E-Learning has gained wide accceptance across the globe both pre-and pot-pandemic periods (UNESCO, 2009). The researchers suggested E-Learning is best alternate method of E-Learning in comparison with off-line or classroom learning to mitigate the constraints to the learners who have constraints for accesing classroom learning systems. (Garrison & anderson, 2003; Weller, 2007; Garrison 2011). The E-Learning provides flexibility, however its efficiency depends on technology and delivery the teachers/faculty (Littlejohn and Pegler 2007; Salmon 2011). Teachers attitudes towards remote learning also a prime factor success of e-learnng (Van Raaij & Schepers, 2008). Teachers role is important for attitude forming in the students for remote or E-Learning (Pynoo et al., 2012).

The teachers intention towards adoption of technology and successful application is the basis for successful imlementation of E-Learning (Davis et al., 1989; Barki & Hartwick, 1994). The technology if it is useful to the learnings can create a positive attitude towards e-lerning (Rogers, 2003). The authors have used the Test of E-Learning Relatted Attitudes (TeLRA) scale developed by (Kisanga and Ireson, 2016). This measurement/scal is valid and reliable to assess the attitudes of E-Learning in the context of selc-consciousness

The high-school students or "Adolescence," as defined by the World Health Organization, is the period duaring the ages 10-19, a phase of life between childhood and adulthood.. During this period, the students are in the process of self-discovery, forming their identities, and understanding their social roles (Christie, 2005). Awareness of their bodies plays a significant role in this process. The support systems and conscious approaches that help adolescents develop a positive self-acceptance towards technology and learning habits. One of the key concepts in maintaining stability is self-consciousness, which can be summarized as an individual's inward focus of attention (Stein, 1986). It is a concept related to the individual seeing themselves as an object by focusing on their internal thoughts and motivations. “It consists of three sub-dimensions: Private Self-Consciousness, Public Self-Consciousness, and Social Anxiety. Private Self-Consciousness is defined as thinking about oneself and one's own self". Public Self-Consciousness is related to perceiving oneself as a social object and general appearance. The last sub-dimension, Social Anxiety, can be expressed as the fear of negative evaluation (Fenigstein, 1975).

While the increase in self-awareness is generally considered a positive development, the literature emphasizes that this increased awareness can also bring about some problems. Ingram's meta-analysis study reveals a positive relationship between psychopathological disorders and self-consciousness (Ingram, 1990). There are studies examining the relationship between self-consciousness and learning disorders. According to the general results of these studies, there is an observed relationship between the dimensions of self-consciousness, particularly the sub-dimensions of Public Self-Consciousness and social anxiety, and learning habits (COL 2003).

2. LITERATURE REVIEW

Several attitude scale were developed in the recent past integrating ICT (Nickell & Pinto, 1986; Richter et al., 2000) and towards E-Learning (Bernard et al., 2004; Wilkinson et al., 2010; Morse et al. 2011; Hernandez-Ramos et al., 2014). The E-Learning or remote lerning is learning from the electronically supported learning using the technologies like Zoom, Microsoft Teams, BlueJeans and other technologies. Several studies reported the deficits in the existing e-learing attitude scales (Garland & Noyes, 2008; Teom 2010b; Hernandas-Ramos et al., 2014).

The recent technological advances and ICT experiences there is a need to develop a scale that needs to demonstrate a predictive validity (Garland & Noyes, 2008). The available scales are not fit to use in diverse population because these are construct specific (Bearnard et al., 2004), and may not meet the researchers requirement that need to investigate the students attitudes. The scales developed measures IT skills and experience, IT use, IT access (Wilkinson et al., 2010). Such scales concentated only skills rather than E-Learning attitudes of the students.

The Teo (2010b) developed a 21 item E-Learning acceptance measure (EıaM) scale with tutor quality, perceied usefullness and facilitating conditions. This scale also ignored the students' attitudes towards E-learing.Therefoe knowled based on students attitude towards E-Learning which was developped by Kisanga and Ireson (2016) was used to measure the E-Learning attitudes of High School Students in Hyderabad City, an Indian Metro

3. METHODOLOGY

This study used the correlation method to examine the relationship between participants' learning attitudes and self-consciousness levels. The study involved High School students from Hyderabad City, an Indian Metro.

The participants were selected to form a representative sample from these schools following the convenience sampling method.

A standard scale was used measure the students learning attitudes and, scales were employed to determine their self-consciousness levels. The collected data were assessed through statistical analyses, and the relationship between participants' demographic characteristics and their learning attitudes and self-consciousness levels were investigated.

3.1. Study Group

The sample included High School students from the Schools around Hyderabad City, an Indian metro. The Ethical and Informal consent was approved from the schools before testing. The following were administered face-to-face: Informed Consent Form, Self-Consciousness Scale (Appendix 4), and Test of E-Learning Related Attitudes (TeLRA) scale.

The convenience sampling method was used, comprising 305 male and 273 female students. Convenience sampling involves collecting data from a sample that the researcher can easily reach. The reason for using the convenience sampling technique is to select the targetted population and save the resurces (Büyüköztürk, 2021).

3.2. Data Collection Tools

The study used a Form, Self-Consciousness Scale, Test of E-Learning Related Attitudes (TeLRA) scale

Sociodemographic Form

This form includes questions designed to predict participants' E-Learning behaviors within the school and family Education environment, covering their gender and E-Learning attitudes.

Self-Consciousness Scale

The original form of the scale, conceptualizing the definition of self-consciousness, was created by Feningstein in 1975. The scale consists of 23 items and features a 5-point Likert type. The response options are "completely true=5," "somewhat true=4, "neutral=3", "somewhat false=2," and "completely false=1."

The scale comprises three sub-dimensions: Private Self-Consciousness (focusing on one's inner thoughts, feelings, and reactions), Public Self-Consciousness (generally related to one's

appearance and how they are perceived by others), and Social Anxiety (reflecting concerns about how one presents themselves to others and social anxiety).

The Private Self-Consciousness subscale consists of ten items ("1, 3, 5, 7, 9, 13, 15, 18, 20, 22"), the Public Self-Consciousness subscale consists of seven items ("2, 6, 11, 14, 17, 19, 21"), and the Social Anxiety subscale consists of six items ("4, 8, 10, 12, 16, 23"). The reverse-scored items are 3, 9, and 12.

E-Learning Attitudes Test

The original form of this test was developed by Fraser in 1981 to objectively measure and evaluate the general attitudes the Test of Science Related Attitudes (TOSRA), a five-point scale that ranges from Strongly agree to Stongly disagree. The constructs of the Test of E-Learning Attitudes Scale (TeLRA) is a modified version of the TOSRA, which was tested and validiated (Kisanga and Ireson, 2016).

3.3. Data Analysis

This study examined the association between students' self-consciousness and E-Learning attitudes. The differences in self-consciousness and E-Learning attitudes scores were analyzed concerning participants' sociodemographic variables. Pearson correlation was applied to investigate the association between participants' learning attitudes and the sub-dimensions of self-consciousness.

Multiple regression analysis was conducted to investigate the predictive power of self-consciousness on learning attitudes. The analyses were performed using SPSS 29.0 software. Parametric measurements were preferred for comparing participants' learning attitudes and self-consciousness scores due large sample size. An independent sample t-test and one-way ANOVA were applied for comparing binary groups.

A normality test (Shapiro-Wilk Statistic) was conducted to ensure the appropriateness of the sociodemographic comparison and correlation tests. The skewness and kurtosis values of the scale score averages were examined for the normality test. The significance level in the study was set at 0.05.

4. RESULTS

4.1. Examination of the Relationship Between Participants' Age, E-Learning, and Self-Consciousness Scores Using Pearson Correlation

Pearson correlation was applied to investigate the relationship between participants' E-Learning attitudes and the sub-dimensions of self-consciousness. Multiple regression analysis was performed with the variables where a correlation was detected to investigate the predictive power of self-consciousness on E-Learning attitudes.

Table 1. Correlation analysis results between age, E-Learning attitudes and self-awareness scores

	1	2	3	4	5
Age	*1*				
E-Learning Attitude	*-.006*	*1*			
"Private Self-Consciousness"	*.004*	*.047*	*1*		
"Public Self-Consciousness"	*-.002*	*.,309***	*,397***	*1*	
"Social Anxiety"	*-.002*	*.270***	*.064*	*.523***	*1*

According to the correlation findings in Table 1, no significant correlation was found between age and E-Learning attitude or self-consciousness (p>0.05). A positive and significant relationship was identified between the total E-Learning Attitude score and public self-consciousness (r=.31; p<0.05) and social anxiety (r=.27; p<0.01) subdimensions.

4.2. Examination of the Findings of Multiple Regression Analysis on the Prediction of Participants' E-Learning Attitude Scores by Self-Consciousness Subdimensions

Table 2. Multiple regression analysis results on predicting E-Learning attutide according to self-consciousness sub-dimensions

Model		***B***	***SH***	***B***	***t***	***p***	***F***	***R^2***
	(constant)	*60.746*	*3.687*		*16.492*	*.000*		
	"Public Self-Consciousness"	*1.029*	*.210*	*.228*	*4.893*	*.000****	*35.23***	*.21*
	"Social Anxiety"	*.650*	*.200*	*,162*	*3.256*	*.001***		
a.Dependent variable: E-Learning Attitudes								

In Table 2, a multiple regression analysis was conducted to predict the E-Learning attitude score by self-consciousness subdimensions. The model was found to be statistically significant [F(2,578)=30.16; p<0.001]. According to the results, the general self-consciousness sub dimension score (β=.23; p<0.001) and the social anxiety sub dimension score (β=.15; p<0.001) significantly and positively predicted the total E-Learning scores. The increase in general self-consciousness scores explains 21% variance of the increase in total E-Learning attitude scores (R^2=.21).

4.3. Examination of Participants' E-Learning Attitude Comparisons in Terms of Demographic Variables

Findings of Independent Sample t-Test on the Differentiation of E-Learning Total Scores by Gender

Table 3. *Independent Sample t-Test on the Differentiation of E-Learning Total Scores by Gender*

Constant	*Gender*	*N*	*x̄*	*ss*	*t*	*P*
E-Learning attitude	*Male Sutdent*	*305*	*87.95*	*17.5743*	*-6.25*	*<0.001****
	Female Student	*273*	*94.24*	*19.864*		

****p<0.001 **p<0.01 *p<0.05*

According to the findings of the independent sample t-test conducted to examine the differentiation of total E-Learning attitude scores by gender in Table 3, the total E-Learining attutide score was found to be significantly higher in female students compared to male students (t=-6.25; p<0.001).

Findings of Independent Sample t-Test on the Differentiation of E-Learing Attutide Total Scores by Family Education History

Table 4. Independent Sample t-Test on the Differentiation of E-Learning Total Scores by Family Education History

Constant	*Family Education History*	*N*	*x̄*	*Ss*	*t*	*P*
E-Learning Attitude	*"Students with a family Education history"*	*282*	*94.30*	*19.265*	*4.150*	*<0.001****
	"Student without a family Education history"	*296*	*87.78*	*18.093*		

E-Learning Attutide ***p<0.001 **p<0.01 *p<0.05

According to the findings of the independent sample t-test conducted to examine the differentiation of total E-Learning attitudes scores by family educationhistory in Table 4, students with a family education history had significantly higher E-Learning attitude scores compared to those without a family Education history (t=4.15; p<0.001). According to the one-way ANOVA findings conducted to examine the differentiation of total E-Learning attitude scores by E-Learning methods within the school, the total E-Learning score does not significantly differ based on how E-Learning methods are taught at school (F(3,574)=.539; p>0.05). The general averages are as follows: home teaching x̄=91.17, E-Learning x̄=90.85, those who do not attend the school x̄=87.86, and other options x̄=93.16.

According to the one-way ANOVA findings conducted to examine the differentiation of total E-Learning attitude scores by whom students spend their Learning attitude scores do not significantly differ based on whom students spend their fellow students with (F(5/565)=2.44; p>0.05). The averages for the variables are "Family" x̄=90.08, "With fellow students " x̄=91.39, and "Alone" x̄=95.01.

According to the findings of the independent sample t-test conducted to examine the differentiation of E-Learning attitude scores by Family support in Learing, it was found that the E-Learning attitude scores were at similar levels and did not show a statistically significant difference between participants whose family support in E-Learning whose parents did not (t=1.47; p>0.05). The average of the groups was x̄=96.82 for the group with Family E-Learning support and x̄=94.49 for the group without Family support

According to the one-way ANOVA findings conducted to examine the differentiation of E-Learning attitude scores by the frequency of E-Learning time, it was found that E-Learning attitude scores were at similar levels and did not show a statistically significant difference among participants with different frequencies of time spent on E-Learning (F(3,574)=2.30; p>0.05). or "Rarely," and x̄=102.71 for "Never."

4.4. Examination of Participants' Self-Consciousness Comparisons in Terms of Demographic Variables

Findings of Independent Sample t-Test on the Differentiation of Self-Consciousness Subdimension Scores by Gender

Table 5. Independent Sample t-Test on the Differentiation of Self-Consciousness Subdimension Scores by Gender

Self-consciousness subdimension	*Gender*	*N*	*x̄*	*ss*	*t*	*p*
Private Self-Consciousness	*Male Student*	*305*	*25.59*	*4.459*	*-3.960*	*<.001****

	Female Student	*273*	*26.96*	*3.714*		
Public Self-Consciousness	*Male Student*	*305*	*17.73*	*4.167*	*-9.374*	*<.001****
	Female Student	*273*	*20.80*	*3.576*		
Social Anxiety	*Male Student*	*305*	*14.78*	*4.269*	*-7.515*	*<.001****
	Female Student	*273*	*17.44*	*4.145*		

According to the findings of the independent sample t-test conducted to examine the differentiation of self-consciousness subdimension scores by gender in Table 5, the private self-consciousness subdimension score was found to be significantly higher in female students compared to male students (t=-3.96; p<0.001). The general self-consciousness subdimension score was found to be significantly higher in female students compared to male students (t=-9.37; p<0.001). The social anxiety subdimension score was found to be significantly higher in female students compared to male students (t=-7.51; p<0.001).

Findings of Independent Sample t-Test on the Differentiation of Self-Consciousness Subdimension Scores by Family Education History

Table 6. Independent Sample t-Test on the Differentiation of Self-Consciousness Subdimension Scores by Family Education History

Self-consciousness subdimension	*"Family Education History"*	*N*	*x̄*	*ss*	*t*	*p*
Private Self-Consciousness	*"Students with a Family Education history"*	*93*	*26.56*	*3.841*	*.779*	*.436*
	"Students without Family Education history"	*485*	*26.18*	*4.237*		
Public Self-Consciousness	*"Students with Family Education history"*	*93*	*20.16*	*3.962*	*2.397*	*.017**
	"Students without Family Education history"	*485*	*19.00*	*4.207*		

Social Anxiety	*"Students with Family Education history"*	*93*	*16.59*	*4.758*	*1.294*	*.196*
	"Students without Family Education history"	*485*	*15.93*	*4.343*		

****p<0.001 **p<0.01 *p<0.05*

According to the findings of the independent sample t-test conducted to examine the differentiation of self-consciousness subdimension scores by Family Education history in Table 6, the general self-consciousness subdimension score was found to be significantly higher in students with a Family Education to those without Family Education history (t=2.39; p<0.05).

Findings of One-Way ANOVA on the Differentiation of Self-Consciousness Subdimension Scores by Whom E-Learning Spent wit

Table 7. One-Way ANOVA on the Differentiation of Self-Consciousness Subdimension Scores by Whom E-Learning Spent with

Self-consciousness subdimension	*Whom Meals are Spent With*	*N*	*x̄*	*ss*	*F*	*sd*	*p*	*Post Hoc*
Private Self-Consciousness	*With family*	*452*	*26.33*	*4.076*				
	With fellow students	*41*	*25.15*	*4.762*	*1.515*	*2/565*	*.221*	
	Lonely	*85*	*26.28*	*4.374*				
	Total	*578*	*26.24*	*4.177*				
Public Self-Consciousness	*With family*	*452*	*19.06*	*4.233*				
	With fellow students	*41*	*19.44*	*3.515*	*.875*	*2/565*	*.418*	
	Lonely	*85*	*19.68*	*4.246*				
	Total	*578*	*19.18*	*4.187*				
Social Anxiety	*With family*	*452*	*15.85*	*4.439*				
	With fellow students	*41*	*16.76*	*3.780*	*1.734*	*2/565*	*.178*	
	Lonely	*85*	*16.64*	*4.511*				
	Total	*568*	*16.03*	*4.412*				

According to the one-way ANOVA findings in Table 7, examining the differentiation of self-consciousness subdimension scores based on whom students spend their E-Learning with,

the self-consciousness subdimension scores do not show a significant difference based on the variable of whom E-Learning are spent with ($p>0.05$).

5. DISCUSSION

In this study, the relationship between E-Learning attitudes and self-consciousness was examined using Pearson correlation and multiple regression analysis to predict E-learing attitude scores by self-consciousness subdimensions. The analyses showed that the general self-consciousness and social anxiety subdimensions positively and significantly predicted the total E-Learning attitude scores. Previous studies indicate varying relationships between self-consciousness and E-Learning attitudes.

The several studies found a connection only with the general self-consciousness subdimension in individuals while reporting a relationship with both social anxiety and general self-consciousness (Bodur et al., 2000; van den Berg et al., 2006). Sawaoka et al. (2012) noted a relationship with both general and private self-consciousness. The current findings align with studies predicting the relationship between E-Learning attitudes, social anxiety, and general self-consciousness (Fazio, 2007).

The evaluation of EAT results by demographic variables involved t-tests and ANOVA. The E-Learning attitude total scores showed significant differences by gender and family history of education. y. No significant differences were found for screen use of technology. Physiological changes during adolescence and psychosocial factors, media, and cultural norms contribute to the E-Learning attitude differences (Keel, 2013). The presence of a family member with Education enhanced the E-Learning attitudes of the high school students.

The comparison of self-consciousness scale scores by sociodemographic variables used t-tests and ANOVA, examining private self-consciousness, general self-consciousness, and social anxiety subdimensions. Significant differences in self-consciousness levels were found by gender, with female students scoring higher in all subdimensions. This aligns with previous studies finding higher self-consciousness levels in females (Allgood-Merten, 1990; Gray, 1984; Elkind, 1979). Females' focus on relational aspects of self may be a determining factor (Jarvinen, 1996).

Significant differences were found in the general self-consciousness subdimension between participants who had family education history and those who had not, with no significant differences in private self-consciousness and social anxiety subdimensions. Previous studies show varying results, with some indicating relationships in general self-consciousness and social anxiety subdimensions, while others found private self-consciousness significant (Dempsey & Miatchel; Matsunaga 2010).

Even though the TeLRA scale has demonstrated an acceptable internal consistency and reliability and predictive validity. There is a need to evaluate this scale under different diversity aspects to measure the E-Learning attitudes. In addition, thorough examination of the factors using confirmatory factor analysis to empirically confirm the scale is needed

6. CONCLUSION

The general evaluation of the study results indicates a positive relationship between E-Learning attitudes and self-consciousness. Higher self-consciousness levels in participants with Family Education history and significant differences in E-Learning Scoaresscores by teaching history suggest increased awareness among individuals. Through the use of TeLRA scale, education institutions can identify several opportunities and theats that impact students attitude towards E-Learning. Thea uthors suggest further studies in a similar direction with a large sample with diverse educational institutions will be helpful to generalize the findings.

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