Analyzing The Influence of Students' Personal Traits and Perceived Course Characteristics On Online Engagement: An Evidence from a Developing Economy

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Abstract

With time, world is shifting towards online approach more and more. Students are used to gain education traditionally by personally going to learning institutes but now they are shifting towards online education. The primary aim of the research is to investigate those factors that influence engagement of student in online education. Most importantly, online learning is a novel concept in developing economies because of lack of resources and awareness, people do not prefer online classes. However, developing countries are gradually moving towards some progressive aspects. Hence, it is necessary to evaluate students' online engagement. For this purpose, Social Cognitive Theory (SCT) and Technological Acceptance Model (TAM) are used. In this research, the dependent variable is Engagement and independent variables are Communication Competencies, Self-regulation, Attitude towards online education. Sense of Identity and Sense of Presence. In this research, quantitative method is used to investigate concepts to find relationships between variables and forecast results. The correlation research approach is used in this research. A survey was conducted with local students via questionnaire (n=152). For data analysis, SPSS and smart PLS-SEM is used in this research. According to the findings of the study, Communication Competencies, Attitude towards online education and Sense of presence impacts significantly on

engagement, while Self-regulation and Sense of Identity impacts insignificantly on engagement. we recommend taking quizzes during or at the end of the session would be very helpful.

Keywords: *Online Engagement; Technological Acceptance Model; Developing Economy; Smart PLS*

Chapter # 1

Introduction

1.1 BACKGROUND OF STUDY:

From sometimes there is rapid growth in the field of education, student engagement is important factor to be considered in online education environment (Redmond et al., 2018). It is considered as the highly highlighted area in betterment of student outcomes in higher education. A study suggested that student learning is highly affected by engagement rather than who students are or where are they enrolled to study. (Chen et al, 2010). As universities are adopting online education more and more so the effect of student engagement is required for further consideration .Student engagement like able to communicate in online session, feeling part of the session as a person is necessary. University of Macquaire present engagement as the level of quality to which student are involved in the e-learning. (Fergusson et al,. 2009). Online learning environment differs vastly from classroom to classroom situations when it comes to students engagement and interaction (Sund & Bignoux, 2018). The Inquiry Committee known as (COI) purpose a platform for involving in online learning and teaching (Garrison et al., 2001).

There are several factors that can effect student engagement among which communication competencies is one of them. Engagement needs innovative thoughts and ideas, as well as communication skills to gain understanding in e-learning platforms (Owens & Hite, 2020).The power to embrace there thoughts in person, in written , and in digital platforms. It helps students to keep engaged and have a better sense of understanding.

Apart from this, Self-regulated skills also effect engagement. For student's engagement, self-regulated skills are way to actively engage student in their academic instruction. student need to view learning as an activity that they do themselves in a proactive manner. (Zimmerman, B. J., & Schunk, D. H. 2001) .Self- regulated skills helps to maintain engagement like creating goals, self-monitoring, self-learning, understanding weakness and act according to there good skills and time

management and motivates the engagement of students towards online education. (Artino, A. R. 2007) students get a chance to learn and improve their self-regulated skills.

Along with Self-regulated skills. Student's attitude towards online education is a important factor in Engagement in e-learning environment . student's attitudes is what they think and feel about the course and its environment and how they act towards it. Their attitude engages their attention and engagement in online learning (Unger & Meiran 2020). From studies it is known that online learning and engagement was highly affected by student's attitude, which is considered as important factor of online learning in countries which are developing (Ullah et al., 2017). Student's attitudes are also impacted by availability and understanding of using the course, its usability and student's level of skills in computer operating (Wang & Aixia 2011). Non the less positive attitudes of student's towards online learning are important for the adoptation and engagement with online learning (Miliszewska & Rhema, 2014)

In addition to above factors, sense of presence also effect the student Engagement. Sense of presence is maintained as the online portals display the view of classroom to engage students, where students can interact with each other, leave comments, ask questions and make their mind present, engaged and involved throughout the online session.(Burgerová 2014, April).

Along with sense of presence, sense of identity plays an important role too in student's engagement, student faces and confronts his abilities and hurdles in classroom which resist student's engagement, now as in online education system it provides an environment like classroom where students feels like interacted and engaged through the session, and it helps them to polish their skills and remove their traits that should be removed in order to grow their personality. (Godoń, R. 2004)

1.2. PROBLEM STATEMENT:

The study is throughly explored in the reference to developed countries (Wolters & Taylor 2012), (Li & Lalani. 2020), and in developing countries (Bhuasiri et al., 2012), (Kilburn, et al., 2014), (Pham, et al., 2019). In reference to Pakistan, (Khan, K. A., & Rafi, S. T. 2020) explored the relation between sense of purpose, sense of presence and engagement. (Anwar & Adnan 2020) explored the relation between attitude towards online education and student engagement but not one of the study is best in our knowledge has been done which has explored communication skills, attitude towards online education, self-regulation , sense of identity and sense of presence with student engagement in the context of Pakistan

In Pakistan, there are over 188 universities where over 445,000 students graduate every year all across the Pakistan (Higher Education Commission, Pakistan, 2021). There were about 10 universities which were providing virtual education before covid-19, but after Covid-19 pandemic, situation and facts are changed. Now most of the universities of Pakistan adopting and providing online education platform to students. (Abbasi, Kashif 2020)

The findings of the study highlighted that in developed countries, engaging students in online education through a system is effective whereas online learning is not able to produce the results what is expected in underdeveloped countries like Pakistan, The lack of physical interaction with the instructor and lack of classroom socialization are some other issues brought up by the higher education students. In this study, gap will be covered by researching on the interaction of different personality traits and course characteristics. To maintain student's m engagement in e-learning it

is necessary to design and build such a system where students can easily participate and feel themselves to be involved in every moment.

1.3. RESEARCH OBJECTIVE:

Objective of the research is to examine the effect of the students personal characteristics and perceived course characteristics on e-learning engagement.

The objective of the study is:

➤ To Investigate, those factors that has impact on learner's engagement.

1.4. RESEARCH QUESTIONS:

➤ What are those factors that has impact on learner's engagement?

1.5. SIGNIFICANCE OF THE STUDY:

The outcome of this study results in many ways like we have a clear view what is the reason behind the lack of interaction and engagement of students to the online educational system. What factors affect the students rather it is their personal traits, course characteristics, self-interest, sense of purpose etc. this study will help in the field of human psychology, role of human interests. It will also help students to learn from the study and try to engage with the online educational system. By this study high educational officials could take steps to learn where they lack in their online teaching style, skills, method etc and try to develop more engage able environment to the students. The result   generated through findings of this study could be used by academic professors, counsellors and administrative departments of higher education institutions in order to administer guidance and counselling to students.

1.6. LIMITATIONS:

The limitations of this study are:

Firstly, the sample size as we have collected data from a sample size of 250 respondents. The second limitation is related to sector as we have targeted university students. The third limitation is related to city, as we have targeted only Karachi. The fourth limitation is related to urban area, as we have selected limited variable. There are more multiple variables that can effect by independent variable.

1.7. ORGANISATION OF THE STUDY:

This file includes 5 chapters:

In the first chapter there is the Introduction regarding the issue of in exploring the impact of learner's personal characteristics and course characteristics on online engagement. Second chapter review of the literature , a detailed analysis of past researches that are related to the topic. Third chapter discusses Methodology which discusses purpose of research , approach and design along with sampling and statistical techniques used, Chapter four is about Chapter Five is Conclusion. Fourth chapter discusses the statistical analysis of data and results will be presented. Finally, the study will be concluded in chapter 5.

Chapter # 2

Literature Review

2.1. Theoretical background:

The theory which is the basis of our conceptual model is Social Cognitive Theory (SCT). This theory is given by Albert Bandura first it named as Social Learning Theory (SLT) then in 1986 it is changed to SCT. the theory self explains the states there is correlative relation between behaviors of human , personal factors and variables of environment (Bandura 1977, 1986). This theory is helpful in communication ,education and phycology. this theory explains that External environmental variables may be influenced by human cognitive personal factors. Individual's portion knowledge can be highly related to observing others in regards to social interactions.

Technological Acceptance Model is another theory on which our conceptual model based. It was given by by Fred in year 1986. TAM change many TRA's attitude measures with the help of 2 technologies acceptance measures and usefulness. TAM is used for modeling users' information acceptance systems or technologies. TAM is IT framework which helps in understanding users adoption and use of new technologies especially in the working place. (Warshaw et al., 1992).

2.2. Hypothesis development:

2.2.1 Communication competencies:

Expressing ideas throughly using verbal, visual, non-verbal , written skills and listening skills to understand. The power to deliver information to others.. Owens 2020 stated that the relationship between communication competencies and engagement is significant. (Owens & Hite 2020). Schunk 2012 also claim that the relationship between communication competencies and engagement is significant. (Schunk & Mullen 2012). On the basis of above discussion we are generating our first hypothesis.

H1: There is a note able relationship between communication competencies with Engagement.

2.2.2 Self-regulated skills:

 It is the capacity to manage your behavior and emotions relevant to the situation. A set of skills that guarantee students to manage their behavior towards a specific goal, regardless of the world and our own feelings.It is to direct your behaviour and emotions relevant to the situation. Zimmerman 2001 stated that the relationship between Self-regulated skills and engagement is significant. (Zimmerman & Schunk, 2001) Artino also claim that the relationship between Self-regulated skills and engagement is significant. (Artino, 2007). Siemens 2014 also claim that the relationship between Self-regulated skills and engagement is significant. (Siemens 2014). On the basis of above discussion we are generating our second hypothesis.

H2: There is a note able connection between Self-regulated skills with engagement.

2.2.3 Attitude in E-learning education:

Student attitude in E- learning is a significant aspect in the learning environment supported by online learning resources. People's attitudes are defined by what they think, feel, and do in response to an attitude object. The attitude of a person toward an activity has a direct impact on behavioural intention. As a result, a student's attitude regarding online education has a direct impact on their decision to incorporate it in their studying processes.. Unger 2020 stated that the relationship between Attitude towards online education and engagement is significant. (Unger & Meiran, 2020)**.** Ubaid Ullah 2017 also claims that the relationship between Attitude towards online education and engagement is significant. (Ullah & Khan, A. 2017). Aixia 2011 also stated that the relationship between Attitude towards online education and engagement is significant. (Aixia & Wang 2011). Rhema 2014 also claims that the relationship between Attitude towards

online education and engagement is significant. (Rhema & Miliszewska 2014). On the basis of above discussion we are generating our third hypothesis.

H3: There is a note able relationship between Attitude in E- education with engagement

2.2.4 Sense of presence:

The sense of presence is like to be present in a virtual learning environment.To measure sense of presence are involvement, realness and the components being sense of spatial presence. Burgerová, 2014 stated that the relationship between sense of presence and engagement is significant. (Burgerová, J. 2014, April). Sökmen, 2021 also claims that the relationship between sense of presence and engagement is significant. (Sökmen, Y. 2021). Sallnäs 2000 also stated that the relationship between sense of presence and engagement is significant. (Sallnäs et al. 2000). On the basis of above discussion we are generating our fourth hypothesis.

H4: There is a note able relationship between sense of presence with engagement.

2.2.5 Sense of identity:

The sense of identity, it can shape an ones social behavior and can affect their inner relationships, like their attachment, involvement and interactions. thus, students have different types of online experiences that results in vast number of levels of sense of identity, Burgerová, 2014 stated that the relationship between sense of identity and engagement is significant. (Burgerová, 2014). Sökmen, 2021 also claims that the relationship between sense of identity and engagement is significant. (Sökmen, 2021). Sallnäs 2000 also stated that the relationship between sense of identity and engagement is significant. (Sallnäs et al. 2000). On the basis of above discussion we are generating our fifth hypothesis.

H5: There is a note able connection between sense of identity with engagement.

2.3. Conceptual Framework:
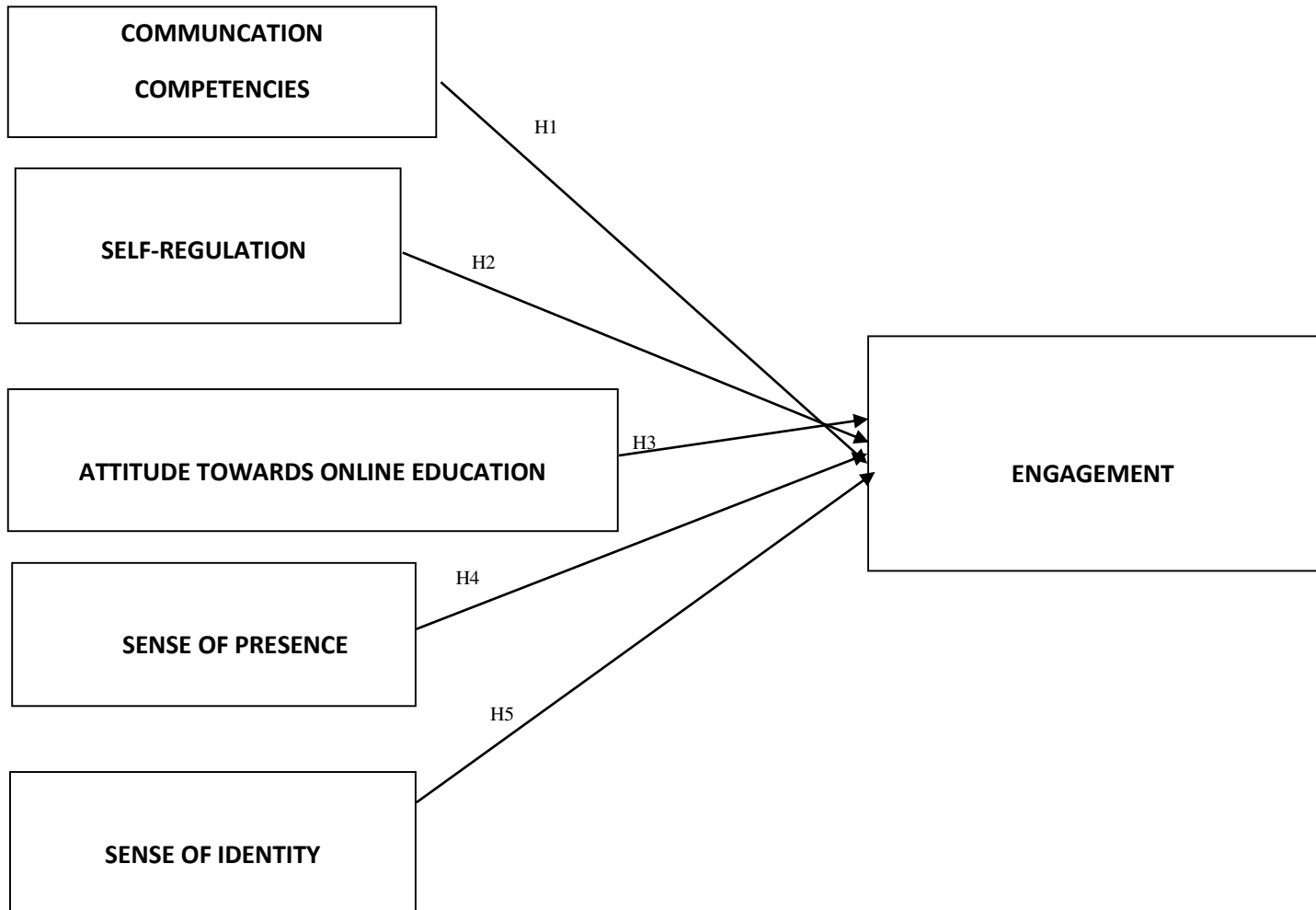
2.4. Empirical Studies:

- Ward, Michael, Gary Peters and Shelley (2010) examined that instructors and student view SIOI favorably. Student and Faculty Perception has used as the independent variable and Online Learning Experience is used as the dependent variable. The data was collected from

total of 246 participants, collected from university students and online instructors. Least square regression model is used to analyze data. The result shows Positive relation of Online Learning Experience with Online Learning experience. The recommendation a larger majority shows intention that they would like to take another course offered in the SIOI medium, and same majority was desiring to recommend other students the SIOI format. It is recommended for the future researchers; more examination is additionally required that teachers should gain by those components for cooperation and coordinated effort that are accessible.

- Will. Ma and Yuen (2011) examine the factors that make ease online knowledge sharing, and so understanding and to make development of the factors that promote the online knowledge sharing behavior of learners. Online Knowledge Sharing has used as the independent variable and Interpersonal Relationship Perspective is used as the dependent variable. The data was collected from total of 581 participants, collected from university students. Structional Equation modeling is used to analyze data. The result shows Positive relation of Online knowledge sharing with Interpersonal relationship perspective. The recommendation is that It has fostered an internet based information sharing model that has the principal need to have a place as its center component to clarify online information sharing conduct. It is recommended for the future researchers that they should also consider additional variables that can affect the online knowledge sharing process collaboration which are available.

- Susan. Sun (2014) look into the responding to the challenges and changes, researchers and online teachers have reflecting and examining on their practices of practices. Learners Perspective has used as the independent variable and Online Language Learning is used as the dependent variable. The data was collected from total of 141 participants, collected from university students. Quantitative and Qualitative both are used to analyze data. The result shows Positive relation of Learners Perspective with Online Language Learning. The recommendation is that they have to pointed out the limitation in the study. It is recommended for the future researchers that comprehension of completely online language learning in general, and reveals insight specifically on student troubles.

- Kuo, Andrew. Brian, Walker, Belland, and Kerstin (2013) examined the degree to which other predictors and interaction contribute to student satisfaction in online learning. Student Satisfaction has used as the independent variable and Online Education is used as the dependent variable. The data was collected from total of 108 participants, collected from university students. Moore's interaction model and SPSS 16.0 is used to analyze data. The result shows Positive relation of Student satisfaction with Online education. The recommendation is to comprehend the traits of innovations that help communication and educational plan that fits explicit learning settings. It is recommended for the future researchers to confirm and sum up the discoveries among different students.

- Bolliger & Martin (2018) analyzed the faculty view of systems that cultivate student engagement in the E-learning environment and difference them with the impression of

students. Instructor and Student Perception has been used as the independent variable and Online Student Engagement Strategies is used as the dependent variable. Data was collected from total of 155 participants, collected from university students and university instructors. The OESQ (Martin & Bolliger, 2018) used to analyze data. The result shows Positive relation of instructor and Student Perception with Online student engagement. The recommendation is that techniques to draw in them in the E-learning environment is significant. It is recommended for the future researcher that they should focus on engagement strategies for mixed courses and online courses to find out contrasts among learning conditions

- Amber, Miller, Angie (2018) examined the manners by which taking courses through a web-based medium effect's student commitment, using information from the National Survey of Student Engagement. Online learning has used as the independent variable and Engagement Strategies is used as the dependent variable. data has collected from total of 17080 participants, collected from university students. Ordinary least squares regression models used to analyze data. The result shows Positive relation of Student perception with Online student engagement strategies. The recommendation is that f2f environments appear to be bound to advance cooperative learning and collaborative learning, student staff collaboration, interaction, effective teaching rehearses, nature of association, interactions quality, and conversations with diverse others. It is recommended for the future researcher that they might integrate concepts such as motivation and likewise known to assume a part in student engagement yet not explicitly estimated with NSSE, and apply past discoveries to the setting of online learning

- Wen and Ashill (2006) studied the determinants of students' satisfaction and their perceived learning outcome. Perceived learning outcomes used as the independent variable and Online Education is used as the dependent variable. data has collected from total of 397 participants, collected from university students and online instructors. Structural equational modeling is used to analyze data. The result shows Positive relation of perceived Learning outcomes with Online. The suggestion a larger part demonstrated that they might want to take one more course presented in the SIOI medium, and a comparable larger part was able to prescribe the SIOI format to different students It is recommended for the future researchers; more examination is likewise required that teachers should benefit from those systems for association and cooperation that are accessible.

- Dumford and Miller (2018) examined the way in which online medium impacts student engagement. Online learning has been used as the independent variable and Student Engagement is used as the dependent variable. The data was collected from total of 17080 participants, collected from university students and online instructors. Least square regression model is used to analyze data. The result shows Positive relation of Online learning with student engagement. The recommendation shows that online learning in advanced education, there is an expanded need to comprehend the engagement and benefits of students who just have a chance for an online learning. It is recommended for the future researchers, further research is additionally required on whether there are disciplinary contrasts between scholarly majors and the utilization of Online educational plan, and assuming that these examples are like those for eye to eye getting the hang of setting.

- Densona and Zhang (2010) examined that students' experiences with diversity impact positively on student learning and their preparation for entering a diverse workforce and society. The impact of student experiences with diversity has used as the independent variable and developing graduate attributes is used as the dependent variable. Data was collected from total of 5464 participants, collected from undergraduate and postgraduate coursework students. Descriptive and Multivariate is used to analyze data. The result shows Positive relation of the student experiences impact with diversity with developing attributes of graduates. The recommendation persuades advancded education sectors to motivate the arrangement of greater variety encounters both inside and outside the classroom It is recommended for the future researchers; should study more differential effect's possible reasons for international and local students.

- Ginns and Ellis (2007) examined that the approaches students take to learning, and the subsequent quality of their learning, is closely related to their perceptions of their learning experience. .The Exploring the relationships has been used as the independent variable and on-line and face-to-face teaching and learning is used as the dependent variable. The data was collected from total of 127 participants, collected from undergraduate students most of them are females. Exploratory factor analysis is used to analyze data. The result shows Positive relation of The Exploring the associations with on-line and f2f instructing and learning.The recommendation is that assuming educators need students to benefit from learning on-line in mixed settings, then, at that point, instructing procedures that explain the worth of balance of understudy postings, and the worth of communication between the understudies on the web, are probably going to work on both the students insights and their

grades It is recommended for the future researchers; to examine if this outcome is a steady element of students e-Learning experience, or then again assuming these builds require elective thing phrasings to be estimated actually while assessing an on-line learning environment.

- Rourke and Laflamme (2007) examined the influence of five groups of communication activities on the quality of students' contributions to online discussion. The influence of instructional methods has been used as the independent variable and the quality of online discussion is used as the dependent variable. The data was collected from total of 19 participants, collected from undergraduate students. Quantitative content analysis is used to analyze data. The result shows Positive relation of the influence of instructional methods with the quality of online discussion. The recommendation is that instructional methods influence the quality of students' contributions to online discussion. It is recommended for the future researchers; investigating the role of well-structured learning activities, clearly defined responsibilities for students and teachers, and confrontational discussion models would be promising directions for future studies.

- Laflamme Kanuka and Rourke (2007) look into the effect of 5 groups of activities of communication on students' contributions in online learning. The influence of instructional methods has been used as the independent variable and the quality of online discussion is considered as the dependent variable. The collection of data is done from total of 19 participants, collected from undergraduate students. Quantitative content analysis is used to analyze data. The result shows Positive relation of the effect of instructional method with standard of online learning discussion. The recommendation is that instructional methods influence the standard of students' contributions to online learning. It is

recommended for the future researchers to investigate the effect of well structured learning activities clearly tells about the responsibilities for the students and teachers . The confrontational discussion model considered to have great effect in future studies.

- Chang and Chiu (2007) combined the IS success model and fairness theory to develop a model for examining the motivations underlying learners' intents to use Web-based learning in the future. The independent variable has been used to examine the combined influence of fairness and quality, while the dependent variable has been used to examine the learners' happiness with Web-based learning. The data was gathered from a total of 2500 individuals, all of whom were master's students. The data is analyzed in a two-step process. The results demonstrate that the hypothesized compensatory model of links between perceptions of quality, fairness, satisfaction, and intention to continue using Web-based learning is partially supported.. The recommendation is that developing people's views of justice is just as vital as developing their perceptions of quality; it's also a key component of improving people's feelings of pleasure. Future scholars, Web-based learning providers, and information systems managers will find our suggested fairness and quality model fertile ground for further refinement and development in understanding how to inspire and maintain Web-based learning usage.

- Flynn, and Campbell (2005) In a large undergraduate accounting class, investigated students' impressions of e-learning. The quality and benefits of e-learning were utilized as the dependent variable, while what campus-based students think was used as the independent variable. The data was gathered from a total of 600 individuals, all of whom were first-year undergrads. Data is analyzed using both quantitative and qualitative methods. The end result is as follows: Traditional lectures and tutorial groups, according

to 81% of study respondents, result in more effective student learning than a pure e-learning environment. The difference, according to the proposal, is due less to Irish students' naive acceptance of ICT in education and more to a genuine improvement in the quality of their educational experience. The issue of integrating IT into the educational process is a key aspect of future advances, and it is recommended for future researchers.

- Wu He (2012) used data mining and text mining techniques to investigate the online inquiries and chat messages automatically recorded by a live video streaming (LVS) system. The dependent variable is data mining and text mining, while the independent variable is students' online interaction. The data was gathered from a total of 298 individuals, all of whom were undergrads. Data is analyzed using the predictive model.. Most students in the peer-moderated group had low involvement levels and depended solely on student-content interaction, according to the findings. New teachers who teach LVS courses should be obliged to attend a training session, according to the recommendation. Future scholars are encouraged to conduct discipline investigations in LVS learning settings.

  - Paul and Molly (2016) investigated a model that hypothesizes that user engagement and subsequent usage behavior are influenced by user experiences of user from operationalized, social interactions among users, as personalization, social resources access, transparency, social acquaintances critical mass, as well as technical features of the platforms for social media, operationalized as completeness, evolvability and integration. The independent variable was User Engagement, and the dependent variable was Social Media Influence. The information was gathered from a total of 408 individuals, all of whom were social media users. To analyses data, partial least square (PLS) is used.

The findings show that critical mass has a significant impact on both usage behavior and engagement. Both social and technical aspects influence user involvement and, as a result, usage, with views of the critical mass of risk and socializing having extra direct effects on usage. Future researchers should investigate whether comparable findings could be extrapolated to different generational characteristics and platforms for social media

- Martin, Wang, and Sadaf (2018) investigated student perceptions of the effectiveness of twelve distinct teacher facilitation tactics for establishing instructor presence, instructor connection, engagement, and learning. The independent variable was student perception, whereas the dependent variable was engagement and learning. The information was gathered from a total of 188 people, including undergraduate and graduate students. To examine data, the Root Mean Square model is utilized. Undergraduate students scored lower on engagement and learning than post-doctoral students, according to the findings. It is suggested that teachers include a video and provide a text transcript of it so that students can refer to it at any moment during the course Future researches should concentrate on investigating faculty perceptions of facilitation tactics and comparing variations between faculty and student perceptions.

- Kurucay, Fethi Inan(2017) In an online undergraduate course investigation the effects of learner-learner interactions on students' reported learning, achievement, and satisfaction. The independent variable was learner interactions, and the dependent variables were satisfaction and learning. The information was gathered from a total of 77 individuals, all

of whom were university students. The data is analyzed using the SPSS 20.0 model. Students' happiness with the course improves when they work together in a setting where everyone in the group values learner interaction. Learner-to-learner interaction has a substantial impact on learners' online programs experience, but not necessarily on their interest or capability in online programs, according to the findings.. Future researchers should monitor and checking students logins to the web based learning environment and observing the importance of their association to the course exercises to decide the real amount and nature of connection among students.

- Eom and Ashill (2016) In the context of a university online course, investigated the drivers of students' happiness and perceived learning outcomes. The independent variable was Perceived Learning Outcomes and Satisfaction, while the dependent variable was Online Education. The information was gathered from a total of 3285 participants, all of whom were university students. To analyses data, the partial least squares (PLS) model is used. The study's findings suggest that the instructor's exterior influence may be required to increase learning outcomes and satisfaction. The strongest indicators of user satisfaction and learning outcomes are course design, teacher, and conversation. Future researchers should investigate the interrelation of the factors that influence e-learners' reported learning outcomes and satisfaction.

- Emma King and Russell Boyatt (2014) investigated the factors that influenced academics' adoption of technology for teaching and learning support. The independent variable was

exploring factors that influence e-learning adoption, and the dependent variable was higher education. The information was gathered from a total of 48 individuals, all of whom were graduate students. To analyses data, the partial least squares (PLS) model is used. The study's findings reveal that staff motivation to adopt e-learning stems from a larger interest in teaching and learning. The recommendation is that the organization's infrastructure and culture be further developed in order to facilitate the adoption of e-learning as a workplace innovation. It is suggested for future studies to examine into the extent to which these findings are repeated in different organizations to adopt innovation.

- Renee Kaufmann and Jessalyn I. Vallade(2020) looked into approaches to reduce loneliness perceptions, particularly given its harmful effects on students' learning experiences. The independent variable was exploring connections, whereas the dependent variable was the online learning environment. The information was gathered from a total of 218 participants, all of whom were undergraduate students. The data is analyzed using a multiple linear regressions model. The study's findings highlight the significance of the instructor's role in establishing and maintaining rapport and atmosphere. The multidimensional nature of relational communication in the online classroom, as well as the need of not only building rapport, but also of generating and maintaining a pleasant climate, are the recommendations. Future researchers should undertake direct comparison studies with FtF and online students to study the impact of relationships and feelings of isolation, as well as their effects on learning outcomes.

- Fan Ouyang1; YuHui Chang2; Fan Ouyang1; YuHui Chang2; Fan Ouyang1; Fan Ouyang Cassandra Scharber2 is a writer who lives in New York City. Jiao Pengcheng3 Tianhui Huang(2020) investigated the instructor-student collaborative partnership in an online course where the instructor fosters learning through a learning community method. The independent variable was the instructor-student collaborative relationship, while the dependent variable was the online learning community course. The information was gathered from a total of... participants, all of whom were undergraduate students. To assess data, a qualitative and quantitative model is used. The findings show that instructors and students not only actively participate in learning, instruction, and the creation of a social learning environment, but they also maintain mutual interactions, communications, and actions in order to construct knowledge, design and facilitate discussions, and create a social learning environment. The following is a suggestion,Future researchers should use diverse approaches to create a complete picture of the collaborative collaboration, incorporating classic qualitative research methods and new learning analytical methods.

- Feng (2017) used a problem-centered learning cycle consisting of activation, application, and integration to investigate how online behavior involvement influences achievement in a flipped classroom. The independent variable was online behavior engagement, and the dependent variable was a learning management system. The information was gathered from a total of 488 individuals, all of whom were undergraduate students. The data is analyzed using the PLS-SEM technique model. The study's findings reveal that participation in online studies and interaction had a strong indirect impact on formative assessments and final performance in problem-solving tasks. Educators should

conduct formative evaluations in a variety of formats to help students improve their final grades. Future researchers could integrate indications of cognitive and emotional engagements when developing a more holistic model for explaining the relationship between different types of engagements and achievement in the flipped classroom.

- Karimi (2016) looked into the factors that encourage people to use mobile learning. The independent variable was mobile learning uptake, and the dependent variable was self-directed learning. The information was gathered from a total of 130 participants, all of whom were undergraduate students. The data is analyzed using the m-learning adoption model. Learning styles are crucial indications of m-learning uptake, according to the findings of the study. The recommendation is that intrinsic motivation, which is tied to the process of executing an activity rather than overall performance, is the only factor that influences m-learning adoption. In order to validate these cause-effect relationships, future researchers should take a longitudinal strategy.

- Martin, Wang, and Sadaf (2018) investigated student perceptions of the effectiveness of twelve distinct teacher facilitation tactics for establishing instructor presence, instructor connection, engagement, and learning. The independent variable was student perception, whereas the dependent variable was engagement and learning. The information was gathered from a total of 188 people, including undergraduate and graduate students. To examine data, the Root Mean Square model is utilized. Undergraduate students scored lower on engagement and learning than post-doctoral students, according to the findings. It is suggested that teachers include a video and provide a text transcript of it so that

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- Russell Boyatt (2014) investigated the factors that influenced academics' adoption of technology for teaching and learning support. The independent variable was exploring factors that influence e-learning adoption, and the dependent variable was higher education. The information was gathered from a total of 48 individuals, all of whom were graduate students. To analyses data, the partial least squares (PLS) model is used. The study's findings reveal that staff motivation to adopt e-learning stems from a larger interest in teaching and learning. The recommendation is that the organization's infrastructure and culture be further developed in order to facilitate the adoption of e-learning as a workplace innovation. It is suggested for future studies to examine into the extent to which these findings are repeated in different organizations to adopt innovation.

Chapter # 3
METHODOLOGY

3.1. Research Purpose:

In research purpose there are so many different purposes of research but the three most common and effective purposes of research of which are named as Exploratory, Descriptive and Explanatory. The explanatory research is that type which provides you the focusses on explaining the main and important aspects of study in detailed manner (Balfour 2012). The purpose of this research is explanatory to provide the better understandings for the problem and perceived usefulness is explained with the help of past theories and literatures.

3.2. Research Approach:

In total mainly 3 techniques which are Quantitative, Qualitative and Pragmatic approach these are approaches which are commonly used in researches. In quantitative approach the data is analyzed numerically, mathematically though survey forms and other similar statistical forms (Plonsey 2007). In this research we are using quantitative approach because the data which is collected is in numeric form.

3.3. Research Design:

The study we used correlational research design, it is a type of non-experimental research method, correlational research design used to measure more than one cross connected variables needs to be investigated yo the deegree with which they are related, after watching their behaviors. (Seeram, E. (2019). Correlational design gives us the advantage to measures the relationship between two variables, correlation research desig is best fit for this study

3.4. Sampling Technique:

In this study the convenience non-probability sampling technique is used the main advantage of this technique is that it is a sampling method where we collect the data from university student who are trouble free to get in touch and reach and to maintain time and cost efficiency. The wide range of researchers prefer and use this sampling technique because this technique makes data collecting method easier

3.5. Target Audience/Population:

The target audiences of the current study are the university students.

3.6. Sample Size:

The sample size for this study is 250 participants.

3.7. Statistical Techniques:

The statistical technique we use is PLS-SEM.

3.8. Questionnaire and Measurement Instrument:

In this study, all the measurement items for each variable were adopted from past paper. The questionnaire was based on previous studies. The items of communication skills were taken from Dewine and perotti in (1987). The item of skills based of self regulation learning by Barnard et al in (2009). The item of Attitude towards online learning were taken from Miliszewska and Rhema(2014). The item of Sense of presence b were taken from Swan and richardson (2003). The item of Sense of identity were taken from Moon et al (2006). The item of Engagement were taken from Mosholder (2007). The data is collected by a Likert scale of five points from strongly disagree (1) to strongly agree (5).

3.9. Ethical Consideration:

The required information is collected voluntarily from respondents via a questionnaire for the purpose of research. It's just for the purpose of reaching the study's goal, and it can't be used to invade research participants' privacy. Furthermore, no personal information of any kind can be transmitted anywhere, ensuring that it is always kept private.

3.10. Demographics:

Table 1

Profile of respondents (N = 152)

Demographic items	Frequency	Percentile
Male	70	47%
Female	82	53%
Age		
18 to 22	47	31%
23 to 27	74	49%
28 to 32	29	18%
Above 32	2	2%
Year of study		
Matriculation	9	6%
intermediate	20	13%
Undergraduate	38	25%
Graduate	85	56%

Table 1 exhibits the demographics of respondents. Out of 152 students 47% are male while 53% are female. Also 31% students belong to the age group of between 18-22 years, 49% students are belonging to the age group of between 23-27 years. 18% students are belonging to the age group of between 27-32 years and 2% students are belonging to the age group of above 32. 6% of students are from matriculation, 13% of students are from intermediate, 25% of students are from Undergraduate, and 56% of students are from Graduate.

Chapter # 4
Data Analysis

4.1. Data Analysis:

The PLS SEM was carried out using SmartPLS 3.2.7. (Ringle et al., 2015; Raza et al., 2021) When there is little prior information and expertise on the given hypotheses in constructing the conceptual model, and the focus is not on confirmation but on exploration, PLS SEMis considered one of the finest techniques (Hair et al., 2014). PLS SEM is an excellent technique, especially when used for exploratory research and theory construction, because of its widespread acceptance and effective application in the IS sector (Hair et al., 2017; Ali & Raza, 2017). PLS SEM, on the other hand, works well with complicated models and has no restrictions on data distribution or sample size (Hair et al.,2014). PLS SEM is deemed the best method to use for generating this study because it is exploratory and based on the stated considerations and assumptions. A two-step strategy was employed to verify the created research model in that study. The first is concerned with the evaluation of the "outside measurement model," while the second is concerned with the evaluation of the "inner structural model" (Hair et al., 2017; Raza & Khan, 2021).

4.2. Measurement Model:

It is claimed that throughout the estimation examination, both validity and reliability were confirmed (Hair et al., 2014; Ali & Raza, 2017). The term "reliability" refers to "the degree to which a scale produces consistent and dependable results over time" (J. Hair et al., 2017)

"Cronbach's alpha" and "composite reliability (CR)" are two methods for determining dependability. In order to be recognised, the composite reliability and Cronbach's alpha values must be at least 0.70. 2014 (J. Hair et al.) According to Table 2, Cronbach's Alpha values are greater than 0.70, and Composite validity values are also greater than 0.70, indicating that the dependability is confirmed (Raza & Hanif, 2013; Raza et al., 2020).

In addition, both "discriminant validity" and "convergent validity" must be determined in order to confirm culpability. The term "convergent validity" refers to "the extent to which a degree emphatically links with elective measurements of the same construct." Researchers should consider the "indicators loadings" and the "Average Variance Extricated (AVE)" in order to assess convergent validity. Though the indicator's value should be at least 0.50, the AVE readings should be at least 0.50. (Hair et al., 2014; Khaskheli et al., 2020; Raza et al., 2021). According to Table 2, both requirements are met, indicating that the convergent validity has been established.

Table 2 Measurement model results.

Constructs	Items	Loadings	Cronbach's α	Composite reliability	Average Variance extracted
ATT	ATT1	0.761	0.715	0.797	0.533
	ATT2	0.756			
	ATT3	0.798			
	ATT4	0.721			
	ATT5	0.714			
	ATT6	0.762			
	ATT7	0.789			
	ATT8	0.718			
CC	CC1	0.888	0.842	0.715	0.590
	CC2	0.708			
	CC3	0.710			
	CC4	0.769			
ENG	ENG1	0.735	0.851	0.728	0.583
	ENG2	0.762			
	ENG3	0.757			
	ENG4	0.754			
	ENG5	0.727			
SOI	SOI1	0.737	0.849	0.735	0.586
	SOI2	0.735			
	SOI3	0.794			

SOP	SOP1	0.853	0.810	0.703	0.565
	SOP2	0.862			
	SOP3	0.900			
SR	SR1	0.820	0.862	0.763	0.571
	SR2	0.767			
	SR3	0.892			
	SR4	0.802			

Discriminant validity is evaluated by studying the cross-loading, correlation matrix and (HTMT) criteria.

Table 3 shows that the square root of AVE is more significant than the relationship of latent construct, implying that the criteria, namely that the square root of AVE should be more notable than the relationship of latent construct suggested by (Fornell & Larcker, 1981; Raza et al., 2021; Qureshi et al., 2021).

Table 3 Summary statistics.						
	ATT	**CC**	**ENG**	**SOI**	**SOP**	**SR**
ATT	**0.775**					
CC	0.516	**0.765**				
ENG	0.511	0.525	**0.798**			
SOI	0.533	0.419	0.367	**0.796**		
SOP	0.515	0.377	0.409	0.275	**0.782**	
SR	0.468	0.383	0.410	0.450	0.450	**0.709**

Table 4 shows the figure stacking of each entity whose cross stacking is more notable than the stacking of its related construct and the contrast between them is greater than 0.1, indicating that they meet the requirements set by (Gefen et al., 2005; Raza & Khan, 2021; Qazi et al., 2021).

Table 4 Loadings and cross loadings.		

	ATT	CC	ENG	SOI	SOP	SR
ATT1	**0.761**	0.325	0.113	0.386	0.246	0.208
ATT2	**0.756**	0.343	0.308	0.311	0.250	0.321
ATT3	**0.798**	0.213	0.302	0.256	0.224	0.158
ATT4	**0.721**	0.367	0.360	0.268	0.270	0.180
ATT5	**0.714**	0.378	0.329	0.500	0.296	0.458
ATT6	**0.762**	0.261	0.292	0.416	0.303	0.231
ATT7	**0.789**	0.271	0.321	0.168	0.472	0.355
ATT8	**0.718**	0.257	0.233	0.236	0.333	0.243
CC1	0.324	**0.888**	0.240	0.296	0.295	0.299
CC2	0.334	**0.708**	0.378	0.255	0.212	0.212
CC3	0.391	**0.710**	0.280	0.261	0.258	0.293
CC4	0.277	**0.769**	0.385	0.213	0.213	0.201
ENG1	0.352	0.332	**0.735**	0.287	0.206	0.230
ENG2	0.300	0.357	**0.762**	0.219	0.319	0.359
ENG3	0.162	0.306	**0.757**	0.108	0.192	0.207
ENG4	0.307	0.369	**0.754**	0.289	0.311	0.322
ENG5	0.376	0.330	**0.727**	0.162	0.185	0.146
SOI1	0.325	0.240	0.160	**0.737**	0.126	0.220
SOI2	0.436	0.285	0.250	**0.735**	0.171	0.387
SOI3	0.369	0.343	0.325	**0.794**	0.254	0.324
SOP1	0.327	0.308	0.508	0.285	**0.853**	0.407
SOP2	0.325	0.212	0.224	0.127	**0.862**	0.224
SOP3	0.454	0.337	0.407	0.253	**0.900**	0.413
SR1	0.369	0.296	0.250	0.343	0.212	**0.820**
SR2	0.245	0.188	0.320	0.254	0.303	**0.767**
SR3	0.297	0.238	0.266	0.287	0.342	**0.892**
SR4	0.327	0.348	0.308	0.270	0.304	**0.802**

HTMT outcome is detaled in **Table 5**, Table shown that all variables' values are satisfying the criteria given by (Henseler et al., 2015, Ahmed et al., 2021) and (Raza et al., 2020) that's variable HTMT proportion ought to be less than 0.85.

Table 5 Heterotrait-monotrait ratio						
	ATT	CC	ENG	SOI	SOP	SR
ATT						
CC	0.832					
ENG	0.774	0.735				
SOI	0.737	0.718	0.659			
SOP	0.801	0.843	0.649	0.623		
SR	0.807	0.539	0.690	0.678	0.501	

4.3. Structural Model

After the measurement model has been confirmed, the structural model is evaluated. The outcome is shown in Table 6. Each path of the table represents a hypothesis. The result is assessed by looking at the coefficient sign, significance level, and value (Watson et al., 2001). The degree to which independent factors have an impact on dependent variables is denoted by The higher the coefficient value, the more prominent the impact of independent factors on the dependent variable will be. The centrality of the idea appears to be the p value. If the p value of a hypothesis is less than 0.1, it is classified as crucial. The regression path reveals that attitudes toward online education, communication skills, and a sense of presence all have a beneficial impact on participation.As shown in table 6, H1, H2, H4 was accepted, While, self regulation and sense of identity has insignificant effect on engagement. as shown in table 6, which means the hypothesis H2, H5 was rejected.

Table-6 Standardized regression weights for the research model.					
Hypothesis	Regression Path	Effect type	SRW	p value	Remarks
H1	ATT-> ENG	Direct effect	0.215	0.000	Supported
H2	CC -> ENG	Direct effect	0.307	0.004	Supported
H3	SOI -> ENG	Direct effect	0.137	0.723	Not Supported
H4	SOP -> ENG	Direct effect	0.117	0.002	Supported
H5	SR -> ENG	Direct effect	0.123	0.393	Not Supported

4.4. Discussion:

The result shows us that 3 hypotheses out of 5 are accepted. The first path is related to the effect

of Attitude towards online education on Engagement. The relationship is found to be positive

and significant among these variables because of values (β =0.215 and P = 0.000 (P <0.1)) which

proves that the hypothesis H1 is accepted. The studies conducted by (Rhema & Miliszewska,

2014) an and found to be congruent. Prior studies in the literature where Attitude towards online

education was found to have a positive relationship with Engagement (Unger & Meiran, 2020)

Rhema 2014; in adoption of e-learning, student's behaviour and positive attitudes is necessary

for acceptance and adoption of e-learning and to maintaining student engagement. (Rhema &

Miliszewska, 2014)

The second path is related to the impact of communication competencies on Engagement. The

relationship among these two variables have found to be positive and significant because of

values (β =0.307 and P = 0.004 (P <0.1)) which proves the hypothesis H2 is accepted. Studies

that support and justify our result is (Perotti et al., 1987). Previous research indicated that

communication competencies positively influences the Engagement (Owens et al., 2020). It also

suggested when communicating is of capable by learners, their strength of engagement towards

e-learning would increase parallelly. Some studies show that communication competencies do

positively engagement (Owens et al., 2020).

The third path is related to the impact of sense of identity on engagement. The relationship

among these two variables found positive and insignificant because of values (β =0.137 and P =

0.723 (P >0.1)) which means the hypothesis H3 is rejected. This finding is inconsistent with the

past studies of (Chen et al.,2020) found in their research that there is a positive impact between

sense of identity and engagement.

The fourth path is related to the impact of sense of presence on engagement. The relationship

among these two variables have found to be positive and significant because of figures (β =0.117

and P = 0.002 (P <0.1)) which proves that hypothesis H4 is accepted. this result is supported by

(Lin 2004). Previous research indicated that sense of presence positively influences the

Engagement (Burgerová, 2014). These results also suggested that when learners are inclined to

sense of presence, their engagement strength towards e-learning would increase correspondingly.

The fifth path is related to the impact of self-regulation on engagement. The relationship among

these two variables have found to be insignificant and positive because of values (β =0.123 and P

= 0.393 (P >0.1) which indicates the hypothesis H5 is rejected. This finding is inconsistent with

the past studies of (Eom , 2019) the founding of their research us that self-Regulation has

positive impact on Engagement. However, student need to view learning as an activity that they

do themselves in a proactive manner (Zimmerman et al., 2001).

Chapter # 5

Conclusion and Recommendation

5.1. Conclusion:

The objective of current study to examine the influence of learners' perceived course characteristics and personal traits on online engagement. Communication Competencies, self-Regulation, attitude towards online education, sense of identity and sense of Presence are taken as independent variables. Engagement taken as dependable variable. The theories, SCT and the TAM are applied. A total of 152 questionnaires were collected and gathered from university students. The Partial Least Square Structured Equation Modeling (PLS-SEM) technique was applied to analyze the collected data. The result of this study reveals that communication Competencies, attitude towards E-learning and sense of Presence has significant impact in independent variable while self- Regulation and sense of identity has insignificant impact on independent variable. The result of the study provides useful insights into developing and maintaining engagement among E-learners' students. The findings of this study will be helpful to Faculty members, Admins and board of education. Through this study, they will be capable of better understanding of all the factors that influence learner's personal course characteristics and personal traits towards E-learning. Likewise, this study can also help faculty members in making E-learning more effective because they have more knowledge about virtual learning and to maintain engagement.

5.2. Managerial implications:

Based on the results we recommend that engagement in E-learning is quite necessary and will be more effective for students to use E-learning. Large number of students more likely to use E-learning. Using research analysis, we recommends students likely to have recorded classes along with quiz arrange at the end of each session to improve and enhance the effectiveness of E-learning. The students ease and flexibility of online classes makes it attractive option, whereas bad

internet connectivity issues in lower and rural areas makes it difficult for students to avail the smooth benefits of E-learning

As we know nowadays online learning provides students because its flexibility and many online programs are customized to student's needs. The world system is shifted on online system like the education sectors are finding the solutions and ways to provide education through online platforms. They create different online portals for students in all over the world to provide online education.

By our research we recommend that, Engagement needs inovative thoughts and ideas, as well as communication skills to gain understanding in e-learning platforms. The power to embrace there thoughts in person, in written , and in digital platforms. It helps students to keep engaged and have a better sense of understanding.

Similarly, recommendations for self-regulated skill are self-regulated skills are way to actively engage student in their academic instruction. student need to view learning as an activity that they do themselves in a proactive manner. Self- regulation capabilities maintain engagement include creating goals, self-monitoring, self-learning, understanding weakness and act according to there good skills and time management and motivates the engagement of students towards online education.

Furthermore, this study recommends that, in the E-learning environment. Students attitudes relate to how they feel and think about, and how is their behavior toward an attitude thing. Their attitude engages their attention and engagement in online learning. This study shows and indicated towards online learning, engagement and was largely affected because students' attitude and characteristics, and in developing countries it considered as important features in online learning.

In addition, sense of presence is maintained as the online portals display the view of classroom to engage students, where students can interact with each other, leave comments, ask questions and make their mind present, engaged and involved throughout the online session.

At last, our recommendation for sense of identity is that student faces and confronts his abilities and hurdles in classroom which resist student's engagement, now as in online education system it provides an environment like classroom where students feels like interacted and engaged through the session, and it helps them to polish their skills and remove their traits that should be removed in order to grow their personality.

5.3. Future Recommendations:

This study contains a few limitations. This theoretical model was only examined on university students. Maybe the students on lower level or grown-ups have different behavior towards online education, this study generalizability can increase by; researches in future can be done by taking the data from people who are not in university e.g. school students, college students etc as they are also shifting towards E-learning because of covid pandemic situation. Second, the study has taken some variables so a similar examination can be led by taking different variables include sense of purpose, Online interaction etc. The sample size can be increased as well, as this study's sample size was 152 and the study was conducted only in Karachi, future researchers can collect data from all over the country.

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