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Message from the Editor-in-Chief

Hello from TOJDEL

TOJDEL welcomes you. TOJDEL looks for academic articles on the issues of distance education and e-learning and may address assessment, attitudes, beliefs, curriculum, equity, research, translating research into practice, learning theory, alternative conceptions, socio-cultural issues, special populations, and integration of subjects. The articles should discuss the perspectives of students, teachers, school administrators and communities. TOJDEL contributes to the development of both theory and practice in the field of distance education and e-learning. TOJDEL accepts academically robust papers, topical articles and case studies that contribute to the area of research in distance education and e-learning.

The aim of TOJDEL is to help students, teachers, school administrators and communities better understand how to organize distance education for learning and teaching activities. The submitted articles should be original, unpublished, and not in consideration for publication elsewhere at the time of submission to TOJDEL. TOJDEL provides perspectives on topics relevant to the study, implementation, and management of learning with technology.

I am always honored to be the editor in chief of TOJDEL. Many persons gave their valuable contributions for this issue.

TOJDEL will organize the IDEC-2021 International Distance Education Conference (IDEC 2021) (www.id-ec.net) in September 2021.

Call for Papers

TOJDEL invites article contributions. Submitted articles should be about all aspects of distance education and e-learning. and may address assessment, attitudes, beliefs, curriculum, equity, research, translating research into practice, learning theory, alternative conceptions, socio-cultural issues, special populations, and integration of subjects. The articles should also discuss the perspectives of students, teachers, school administrators and communities.

The articles should be original, unpublished, and not in consideration for publication elsewhere at the time of submission to TOJDEL.

For any suggestions and comments on the international online journal TOJET, please do not hesitate to send email to tojdel.editor@gmail.com

July 01, 2021

Editor,
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ACADEMIC PROCRASTINATION AMONG SECONDARY SCHOOL STUDENTS: EXPLORING THE ROLE OF SMARTPHONE ADDICTION. A MIXED METHOD APPROACH

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ABSTRACT

Objectives: The study is intended to investigate gender difference on academic procrastination & smart-phone addiction among the secondary school students. Furthermore the study was also aimed to study the influence of smart-phone addiction on academic procrastination.

Method: The current study adopted the mixed method research design, Such a design amalgamates the powers of diverse research approaches to proliferate accuracy of data, allows for generating more clear picture of the novel phenomenon (Creswell, 2014).

Sample: The present study was conducted on secondary school student of South Kashmir (n = 200). Statistical techniques like S.D. and t-test were used for data analysis.

Instrumentation / Psychometric Measures: The following standardised tools were used to collect the required data. **I.** Academic Procrastination Scale *by A. K. Kalia and Manju Yadav* **II.** Smart phone Addiction Scale *by Vijayshri and Masaud Ansari.* **III.** Semi-structured and in-depth interview.

Results: The results revealed that a significant mean difference was observed between male and female secondary school students on academic procrastination and smartphone addiction. Male students are found to procrastinate their academics more and also exhibit more smart-phone addiction as compared to female students. Furthermore factors like cyber-loafing, anxiety & depression and poor time management are found to facilitate academic procrastination among the students.

Key words: Academic procrastination, Smart-phone addiction, Cyber-loafing, Anxiety, Time management, Gender.

Introduction:

Academic procrastination is a type of delaying explicitly to academic settings. Characterized as superfluously deferring or eluding assignments that should be finished (Schraw, Wadkins, & Olafson, 2007). It includes realizing that one needs to do a scholastic duty or undertake an academic task, however, by one way or other, neglecting to persuade oneself accordingly, as such within the expected period. Accordingly academic procrastination might be responsible for late assignments, academic anxiety, utilization of self-impeding techniques and fear of failure and it regularly results in poorer performance than the individual is capable for achieving (Lee, 2005; Ferrari & Scher, 2000).Research evidences proposes that, academic procrastination is identified with poorer degrees of self-regulated learning, lower academic self-efficacy and related more with elevated degrees of stress and anxiety and negative outcomes in students (for example, Howell & Watson, 2007).It is the particular absence of performance of studies and is prevalent among the students globally (Rabin, Fogel, & Nutter-Upham, 2011).Indeed, it has been demonstrated that learners with enhanced scholastic outcomes utilize more viable time management and proper self-regulation methodologies.

It has been revealed that smartphone addiction is a serious matter among majority of the students (Taymur, et.al. 2016), as they have a potential risk to experience smart-phone addiction (young; 2015).Students who display menacing cell phone use are probably going to encounter usage control problems (Lee & Lee, 2017).They are probably going to invest a lot of time on online media as opposed to perusing their academics (Adeniyi, 2019).Subsequently, they may postpone their academic related tasks (Yasin & Mustafa; 2018). As stated by Hawi & Samaha (2016) that smart-phone addicted students were hardly able to achieve higher levels of academic attainments, because students may suffer from reduced self-esteem as a result of their increased problematic smartphone use (Heather et al., ,2019).

Rationale of the study: Why talk about smartphone addiction.

The present generation of teenagers and youngsters have an advanced relationship with technology that is formed at birth (Beastall 2008). Prenksy (2001) noticed their knowledge of and dependence on ICT, labelling them as "living lives immersed in technology" (p. 1).Even though technological advancements are expected as a cause of ease and entertainment among the customers, but excessive use can likely have an adverse impact, like smartphone addiction. Smartphone addiction is a disorder including uncontrollable excessive use of the smart phones, typically measured as, total amount of time users are online over a certain time period. Perilous smart phone use or online

gaming addiction can have a problematic outcome among the students. Students experience circumstances that negatively impact their academics. They presumably don't study for their exams on time, neither they concentrate on subjects and therefore may defer their referred home work (Ayça, İlknur & Tuğba, 2019).Recurrent smart-phone addiction is a key predictor of low academic achievement in schools and possibly in higher education too. Spending too much time on your phone becomes an issue when it consumes so much of your time, it causes you to harm your face-to-face relations, education, hobbies, your work or other vital aspects of your life and particularly leads to academic procrastination among students.

The age group of 12-18 years using smartphones has shown a rapid increase in the past few years and they are the most vulnerable to smart phone addiction. Adolescents are strongly glued to their smartphone, as a period of *stress and strain,* and *identity crises,* adolescents are usually going through a series of physical and psychological changes. While, on the one end, they are reliant on their parents with regard to their life and identity, on the other end, they are vexing to be independent of their parents, to build their own identity and personality. During these psycho-physical changes, a smartphone becomes indispensable for teenagers, they are more fascinated about the new technology and gets used to the operations of such devices more easily. Catherine Price (2018***)*** in her book *How To Break Up With Your Phone,* argued that most smartphone users have a toxic relationship with their phones, sabotaging their sleep, creativity, and interpersonal relationships. This relationship is tagged as ***"Nomophobia",*** from ***"No–Mobile-Phone-Phobia"***. As for the author's view is concerned, no empirical study has focussed on the causal connection between academic procrastination and smartphone addiction in the delimited area. Thus it seems very essential to examine the relationship between smartphone addiction and academic procrastination among secondary school students.

Literature review:

An attempt has been made to present a brief review of the available studies in the present field of investigation. It is a well-known fact that new vistas of knowledge cannot be explored unless we look into the past. Hence it is very important to scan the work carried out previously and accordingly address the areas which has not yet been explored.

Li, Goa & Xu. (2020) carried out a study on the "mediating and buffering effect of academic self-efficacy on the relationship between smartphone addiction and academic procrastination". The results revealed that smartphone addiction was positively associated with academic procrastination, while as it is negatively associated with academic self-efficacy. Further, mediation analysis indicated that, after controlling for gender, age and academic year, smartphone addiction had a direct predictive influence on students' academic procrastination and an indirect predictive effect via academic self-efficacy.

Saad, M. (2020) investigated, "self-regulated learning and academic procrastination as predictors of smartphone addiction among disabled students". The outcomes indicated that a causal relationship exists between smartphone addiction, academic procrastination and self-regulated learning. Both academic procrastination and self-regulated learning contributed to the prediction of smartphone addiction.

Yang, Asbury, & Griffiths (2019) carried out a study on, "problematic smartphone use: Associations with academic anxiety, academic procrastination, self-regulation and subjective wellbeing". The results revealed that problematic smartphone use predicted academic anxiety and academic procrastination. Also problematic smartphone use facilitated the interactions between, academic procrastination and academic anxiety with self-regulation.

Qaisar, S et.al. (2017) carried out a study on "problematic mobile phone use, academic procrastination and academic performance of college students". It was found that the excessive

Mobile phone usage is linked with lesser performance of learners. It was further revealed that male students were found to have better academic performance as compared to female college students.

(a) Objectives of the study:

1. To find and compare academic procrastination among secondary school students on the basis of gender.
2. To find and compare smart phone addiction among secondary school students on the basis of gender.

(b) Hypotheses:

1. There is no significant mean difference between male and female secondary school students on academic procrastination.

2. There is no significant mean difference between male and female secondary school students on Smart-phone addiction.

Methodology:

The current study adopted the mixed method research design, adopting mixed designs yields converging evidences, maximizes the reliability of outcomes (Creswell, 2014).Mixed method design is applicable in educational settings (Yin, 2006). Such a design amalgamates the powers of diverse research approaches to proliferate accuracy of data, allows for generating clearer picture of the novel phenomenon (Creswell, 2014). In the first phase of the present study the results were quantified by employing different statistical methods. And in the second phase of the study the investigator adopted Semi-structured and in-depth interview to assess the effects of smartphone addiction on academic procrastination among secondary school students.

(a) Instrumentation / Psychometric Measures:

The following standardised tools were used to collect the required data:

1. Smart phone Addiction Scale *by Vijayshri and Masaud Ansari.(2020)*
   The scale is consisted of 23 items divided into Six Dimensions—I. Compulsion, II. Forgetfulness, III. Lack of Attention, IV. Depression and Anxiety, V. Disturbed Hunger/Sleep, VI. Social Withdrawal.
2. Academic Procrastination Scale *by A. K. Kalia and Manju Yadav (2015)*
   The scale is consisted of 25 items divided into four areas—I. Procrastination in Home Work, II. Procrastination in preparation for examination, III. Procrastination in Project Work, IV. Procrastination in co-curricular activities.
3. Semi-structured and in-depth interview.

(b) Participants / Sample

The present study was conducted on secondary school student of South Kashmir (N = 200). Which is further divided into 100 male and 100 female secondary school students. I had easy access to the schools chosen, and the students of 9th and 10th standard were taken into consideration. Sample of 200 secondary school students were selected through simple random sampling technique. Some extreme cases were located for the purpose of qualitative analysis.

Data analysis and Interpretation:

Data were analysed with the help of Microsoft excel professional plus 2013, any significant mean difference among the groups were analysed by using the independent samples t-test.

Showing the Significance of difference between the Mean Scores of male and female students on academic procrastination.

Table, (I)

Gender	N	Mean	SD	t-value	Sig.level
Male	100	66.32	12.89	3.01	
Female	100	60.45	13.04		Significant at 0.01 level

As presented in the table **'I'** it has been indicated that the computed t-value came out to be significant at **0.01** level of significance (t-value-**3.01)**. It indicates that a significant mean difference was found between male and female secondary school students on academic procrastination, hence the null hypothesis No. 1st, which is stated as 'there is no significant mean difference between male and female secondary school students on academic procrastination' stands rejected. Male students are found to procrastinate their academics more as compared to female students.

Showing the Significance of difference between the Mean Scores of male and female students on smart phone addiction.

Table, (II)

Gender	N	Mean	SD	t-value	Sig.level
Male	100	55.66	14.01	2.79	
Female	100	49.23	11.44		Significant at 0.01 level

As shown in table **'II'** it has been indicated that the computed t-value came out to be significant at 0.01 level of significance (t-value- **2.79)**. It shows that a significant mean difference was found between male and female secondary school students on smartphone addiction, hence the null hypothesis No. 2nd ,which is stated as 'there is no significant mean difference between male and female secondary school students on Smart-phone addiction' has also been rejected. Male students were found to have more smart-phone addiction as compared to their counterparts.

Findings based on qualitative assessment:

The major tool utilized to collect the required data was the semi-structured and in-depth interview .Teachers, parents and students were taken into consideration for the interview. The questions were open ended with plenty of scope for both interviewee and interviewer in order to delve deeper into the facets vital to academic procrastination among secondary school students. The analysis yielded insight into factors that facilitate academic procrastination among secondary school students due to excessive use of smart-phone. Excessive smart phone use might affect an individual's curiosity in a classroom. Smart-phone addicted users have shown a deteriorated learning concentration. As reported by Samaha & Hawi, (2016), the risk of using a smart phone has been found to have a negative impact on pupils' academic achievement.

Factors that led to academic procrastination due to smart-phone addiction among secondary school students are as:

(a) Cyber loafing in classrooms:

Cyberloafing is described as the usage of the Internet for personal browsing or e-mail during working hours (Lim, 2002). It is a tendency among the learner to make use of internet for activities which are irrelevant to the learning environment. Due to the widespread usage of smartphones, students' propensity for cyber-loafing has grown, internet addiction among the students during the school hours to surf websites for non-academic purposes deviates the learners from the normal learning path. For instances a few teachers reported that as technological gadgets such as smart-phone and personal computer have become prevalent among the students. Availability of internet had advanced a tendency among students to use their smart phones during teaching learning for activities which are irrelevant to academics. Another teacher reported that almost all the students in a particular classroom were using their smartphones for 'texting' or for some other purposes like 'checking the scores' etc. this cyber loafing behaviour of students causes various negative effects for the learning environment, it affects the flow of teaching learning transaction and lowers the academic success and performance to a great extent.

(b) Anxiety, depression and Insomnia:

Excessive smartphone use is associated with poor psychological wellbeing, anxiety and depression among the students. Few of the parents were of the opinion that their wards are mostly glued to their smart phones, and mostly they appeared to be full of depression and anxiety and are unable to concentrate on their studies fully and it has been demonstrated that this anxiety and depression might adversely impacts learning outcomes and performance of students. It was also reported that excessive levels of problematic social networking among students revealed more sleeping disturbances, which in turn causes low quality sleep, resulting in low academic achievements. Less motivation and self-regulation failure is another factor causing academic procrastination among secondary school students. For instance few parents were of the view that if smart phones were taken back from their wards, they have observed frustration and restlessness among them, this self-regulation failure increases their habit of smart phones, which then outcomes in the form of addiction. It has also been observed that less motivation towards academics among the learners due to the excessive smartphone use distracts the students and precludes the motivation for indepth learning.

(c) Poor time management:

Smart-phone addiction usually involves, playing online games, social networking like face-book, Instagram etc. listening music and watching movies. These activities may take up valuable time that may otherwise be spent on academic pursuits. As reported by some of the students that they sometimes pretend to learn online on a smartphone or PC, but in fact they are not using it for academic purpose. One of the teacher reported that squandering valuable study time due to excessive Facebook use could be a possible cause for academic procrastination among the students. It was also found that young students' remains busy in expressing themselves in an online space, use different kinds of applications, frequently searching for emotional ties, and frequently expressing their instant reactions and feedbacks at any occurrence. The investigator came to a conclusion that more the students playing with their smartphones, less they are devoted to other activities including academics.

Discussion:

Academic procrastination, is a well-documented phenomenon and it has been observed that learners often procrastinate when approaching academic duties (Klassen et.al, 2009; Lay & Silverman, 1996).While as smart-

phone addiction has garnered attention from research scholars from the past few years in the academic setting, and it was revealed that problematic smart-phone use or smart-phone addiction is associated with academic procrastination (e.g. Rozgonjuk, Kattago, & Taht, 2018).The present study was aimed to investigate the gender difference on academic procrastination and smart-phone addiction among the secondary school students, and it was found that male students were found to procrastinate their academics more as compared to female students. The results of the current study are in consonance with the results of the studies carried out by Khan, et.al. (2014) and Demir, & Ferrari (2009), they stated that gender impacts academic deferment .They further stated that male members were found to have greater risks to procrastinate their academics as compared to female members. Furthermore it was also found that male students were found to have more smart-phone addiction as compared to their counterparts. The possible reasons could be that "Technology is regarded by society as highly technical and of male interest, and the use of information technology tools is regarded as a male-specific activity" (North & Noyes, 2002).As a result females appear to develop negative attitudes toward information technology tools. (Sainz & Saez, 2010).Additionally the result of the present study was supported by Jilisha, et.al. (2019) & Kwon et al. (2016), they viewed that men were more prone to smart-phone addiction than women. Although some researcher have indicated that females were highly over-represented in the 'addicted' category (e.g. Lapointe, Boudreau-Pinsonneault, & Vaghefi, 2013; Vaghefi, Lapointe, & Boudreau-Pinsonneault, 2017).Nevertheless the effects of gender on smartphone addiction is little inconclusive and therefore needs further investigation.

Based on the qualitative assessment, it was found that cyber- loafing among the students predicts the academic procrastination, conclusive evidences showed that currently students are using smartphone in a perilous manner and are lacking their control, interest, physical activities, communication and confidence, which disturbs their academic, as they are matted in cyberloafing during class hours (Gokcearslan, Uluyol & Sahin,2018), it was also indicated that excessive smartphone use is associated with poor psychological wellbeing, poor time management ,anxiety and depression among the students. A plethora of related studies also showed a strong relationship between smart-phone addiction and poor psychological wellbeing, anxiety and loneliness among the students (e.g. Bian & Leung, 2015; Huang, Zhou, & Yu, 2013; Long et al. 2016).

Suggestions: How to manage smart-phone addiction among the students.

1. Amount of time to be allowed on the screen must be discussed and negotiated between the parents and children, and prepare a schedule of when he/she can utilize his/her smartphone.
2. Loneliness: if you find your child is predilected to be isolated, he may be a victim of smart-phone addiction. Parents must be very vigilant about the causes of "child-isolation".
3. Smart phones must be banned in the classroom to avoid the cyberloafing activities during the teaching learning process.

Conclusions:

Regular and even excessive access to increasing technologies may convolute our lives, meddle with day to day activities and diminish productivity among the students. The way that youngsters in the present era are using electronic devices, doesn't in any way make them great users. Firstly they are equipped for playing with technology, however not actually utilizing it effectively (Kvavik, 2005). They can Google, but lack the basic information skills to efficiently trace-out the material they needed, they additionally don't possess the information to sufficiently decide the pertinence or reality of what they have searched or found. So therefore while smartphone usage is steadily increasing we recommend preventive measures and interventions aimed at protecting the young generation.

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AN ANALYSIS ON PERCEIVED SERVICE QUALITY AND STUDENTS' SATISFACTION OF E-LEARNING DURING COVID-19 IN HIGHER EDUCATION INSTITUTION

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ABSTRACT
The outbreak of Corona Virus Disease 2019 (COVID-19) in various countries at the end of 2019 has transferred traditional classroom teaching to e-learning platforms, which unswervingly affects the educational quality. The whole education system from school to higher education level has been distorted due to COVID-19 in India and all over the globe and forced to accept online mode. However, even with this paradigm shift, little research has been done to extend traditional service management concepts to online educational settings during the pandemic in developing countries. This research attempts to bridge this gap by applying the SERVQUAL scale, a well-validated and widely used service operations construct, to the online classroom environment, this paper uses a questionnaire survey and Google forms to collect experience data of 354 students. The findings show that the SERVQUAL scale exhibits both reliability and convergent and divergent validity; in fact, in these regards, it outperforms traditional student assessment scales. Four factors empathy, responsiveness, reliability and website content and privacy have significant effect on student satisfaction of perceived e-learning quality. The findings of this paper can be used for making approaches for online education across the globe to accelerate the online education level during pandemic, to promote the reform of information-based education. The paper provides the whole picture of current online teaching-learning during Covid-19, which makes it rare and gives a holistic view of the environment. This novel technique to assessing the quality of e-learning services demonstrates that students may be considered as customers and has far-reaching consequences for all parties involved in higher education delivery.
Keywords: Covid-19, pandemic, perceived service quality, e-learning, online education platform, students' satisfaction.

INTRODUCTION

In 2020, the fear seizes the world's population in the COVID -19 pandemic. This covid-19 infectious disease was first detected in December 2019 in Wuhan city. As with the end of second wave in May 2021 after almost one and half year of pandemic, the COVID-19 pandemic on the education system made schools and colleges closures worldwide. On March 24 2020, India declared a country-wide lockdown of schools and colleges (Sanyal, 2020) for preventing the transmission of the coronavirus amongst the students (Sari et al., 2018). Closures of schools in response to the COVID-19 outbreak have brought to light a number of challenges limiting educational access (Bayham & Fenichel, 2020). COVID- 19 is soaring due to which the huge number of children, adults, and youths cannot attend schools and colleges (Sharma, 2020). Thus covid-19 disease impacted crucially on the education sector. As per UNESCO report, covid-19 has affected 1.6 billion young people i.e., 91% of world's students population could not attend schools and universities. In India, over 320 million students faced by various constraints and nationwide pandemic lockdown (Sharma, 2020). The global outspread of COVID-19 ensued in the closure of universities, colleges, and schools (UNESCO, 2020). This pandemic leads to the diverting of tradition teaching method to online teaching method. Therefore, many institutes go for the online classes (Shehzadi et al., 2021). Sooner than later, in various countries educators began to provide online classes by Google meet, Zoom etc. to restore the normal education system. The Ministry of Education of India support web- based education and enhanced the online platform's service capacity to reinforce online teaching (RAMMOHAN KHANAPURKAR et al., 2020). In result of the epidemic, it is mandatory to the institutional of higher education to maintain the normal teaching order in online mode (UGC, 2020). However, e- learning has some problems like system jams in the online learning platforms etc (Dhawan, 2020; Zalat et al., 2021). Regardless, it is vital to analyze e- learning can avail the needs of teachers and students, whether the e- teaching and learning can accomplish the teaching-learning exercise with high service quality and propose recommendations to promote the expansion of e- education according to the research results. However, scant amount of literature is available on the factors that affect the students' satisfaction and performance in online classes during the pandemic of Covid-19 (Rajabalee & Santally, 2021).

(Bridge, 2020) described that colleges are shifting towards technologies for student learning to avoid a strain during the pandemic season. As a result, the current study's goal is to construct and evaluate a conceptual model of student

satisfaction with e-learning during COVID-19, when both students and teachers have no choice but to use the online platform for learning and teaching without interruption.

(Bhuasiri et al., 2012) said that E-learning bring advantages in education, not only for scholars, but also for universities. (De Byl & Taylor, 2007) detailed that E-learning brings out in reducing costs and empower academics to become more technology and digitally up to date. In addition, e-learning can also facilitate students such as time transportation, security, retraining. Finally, many people believe that learning/teaching is equally effective with respect to quality between the traditional setting and e-setting provided that appropriate methods (e.g., student interactions and timely instructor's feedback to the students) and technologies are utilized. So, in many institutes' educators are changing their traditional way of delivering the services in an attainment to be more flexible to increasing demands of e-learning students eternally (OECD, 2020) .

(Meola, 2020) says as with the emerging trend of Internet of Things (IOT), universities are focusing more over the internet-based tactics to deliver higher education (i.e., e-learning). the online teaching is one of the efficient tools to give lectures, and Modern classrooms are becoming apps (Azlan et al., 2020). But, as the present pandemic condition arouse, conducting online classes at university level have been made compulsory by the educational boards. He also stated that education is no restricted with the lecture room, as for learning there is no need of presence of a teacher to take place.

According to (Astin, 1993) the perception of quality education in traditional learning environment leads to student satisfaction, which is influenced by factors like ; social life on campus, time with instructors, career advice and course website. Several previous research have looked into the aspects that contribute to e-learning performance (Roca & Gagné, 2008; Y.-S. Wang et al., 2007) (Liaw, 2008; Liu et al., 2009).

Educators and practitioners are curious about how online education compares to offline learning in terms of results and accomplishments. Many research have looked into whether offline methods are more productive than online or hybrid ones (Jeong & González-Gómez, 2020; Lockman & Schirmer, 2020; Pei & Wu, 2019). It was noted that students performed much better in online learning. (Henriksen et al., 2021) reported educators faced problems from shifting from offline to online mode of teaching.

Full reviews of SERVQUAL and student evaluation literature are well beyond the scope of this article. Our main focus is on applications of SERVQUAL model in e-learning in higher education institutes. The conceptual underpinnings of the SERVQUAL model were first published in (Parasuraman et al., 1985). He focused on what (Gronroos, 1988) labeled "functional quality," or the performance of a service.

SERVQUAL has attracted considerable attention since its development and has been refined timely from past 25 years. It has been shown to be an effective tool for measuring customer satisfaction in many areas of interest and industries (Bharwana et al., 2013; Hussain et al., 2015; Jabnoun & Al-Tamimi, 2003; Liao & Cheung, 2008; Lin & Sun, 2009). Several studies on e-learning have been conducted to investigate student satisfaction (Ali et al., 2021; Gopal et al., 2021; Jameel et al., 2021; Haozhe Jiang et al., 2021; Puška et al., 2021; Saxena et al., 2021).
(Berry et al., 1988; Parasuraman et al., 2005) express views about service quality, although both pedagogue and practitioners make varying claims about what really constitutes service quality across industries, they are increasingly reaching the consent that service quality is purposively by the variation between customers' expectations of service and their evaluations of the services they receive.

(Stodnick & Rogers, 2008b) were the pioneer researcher to extend SERVQUAL application from traditional setting to classroom experience. However, there is limited literature on student satisfaction using the SEVQUAL methodology in online classrooms during the Covid-19 epidemic (Alzahrani & Seth, 2021; Marlina et al., 2021). According to the findings, certainty, empathy, responsiveness, reliability, and tangibles are the five most important predictors of e-learning service quality and student satisfaction during online classes.

The model consists of the following dimensions (Parasuraman et al., 2005):
1. ''Tangibles'' which include the physical facilities and appearance of personnel.
2. ''Reliability'' which reflects the ability to perform the promised service accurately.
3. ''Responsiveness'' which include the willingness to help customers and provide prompt service.
4. ''Assurance'' which is an indication of the knowledge and courtesy of employees and their ability to inspire trust and confidence; and
5. Empathy which includes caring and individualized attention that the service firm provides to its customers
Universities are developing student-centered strategies that treat students as "customers" (Weerasinghe & Fernando, 2018). Therefore, it can be defined that student satisfaction occurs when students achieve their goals

(Dehghan et al., 2014). Based on definitions student satisfaction in classroom learning environment, it is argued that online student satisfaction happens when students study in the e-learning environment accomplish their aims. Students will not be satisfied when their e-learning experiences are lower than their expectations.

After reading the various research results, researchers studied online education and established many evaluation models. Authors identified studies that have applied SERVQUAL in a college environment. (Udo et al., 2011) pioneered this stream of research by examining the applicability of the SERVQUAL scale to measure student perceptions of university-level e-learning service quality. The author stated that adopting the SERVQUAL scale to gauge university service quality has now become a strategic problem as a result of these findings. Except for reliability, five characteristics play a substantial impact in perceived e-learning quality, which influences learners' satisfaction and future intentions to enrol in online courses.

According to (Asogwa et al., 2014; Lin & Sun, 2009; R. Wang et al., 2010) (Udo et al., 2011; R. Wang et al., 2010) (Jabnoun & Al-Tamimi, 2003; Stodnick & Rogers, 2008b, 2008a) the SERVQUAL instrument has been extensively used to evaluate the service quality of a variety of institutions. Given the general usefulness of this instrument, it would be seemed as fit to investigate its suitability in higher education during Covid-19.

The instrument used in service management literature to measure service quality is the SERVQUAL scale. Very little work has been done to combine education and service management research, even as higher education continues to perform towards student-oriented strategies. Conducting online classes during the pandemic, several new problems arise. This requires special attention that new factors affecting student satisfaction should be taken into consideration in research. This research bridges this gap by applying the SERVQUAL scale within a classroom setting. Can SERVQUAL, a valid and reliable customer-centric scale used to measure the quality-of-service delivery in environments as diverse as retail and business consulting, be used to measure and thus ultimately improve the quality-of-service delivery in higher education? This question is of equal importance to all stakeholders in higher education.

Although other researchers have looked into the aspects that influence student satisfaction, no one has looked into student satisfaction with online classes during the Covid-19 pandemic. Firstly, this have been least explored by Indian researchers in Indian e-learning based study. Secondly, the focus of most of the researchers is before covid-19. Based on this, separate focus is required on this. However, there are no studies that systematically examined the work on e-learning service quality, and how online learning SERVQUAL factors contributes to overall online learning service quality, e-student satisfaction during COVID-19. Students and teachers were not mentally prepared for the change. As a result, the focus of this study will be on how students perceive these changes as reflected in their satisfaction levels. Our research is based on the (Udo et al., 2011) questionnaire with some modifications to reflect an e-learning environment during pandemic. It can be mentioned that online education is a type of service whose quality, for example, can be assessed with modified SERVQUAL.

CONCEPTUAL FRAMEWORK

In essence, the framework in Figure 1 suggests according to the literature, there are three key relationships between the constructs involved in the analysis on perceived service quality and students' happiness with e-learning during Covid-19 in higher educational institutions in developing countries countries. The first link suggests COVID-19 consequences on the components of E-SERVQUAL framework derived from various literature. The second link suggests separate relative effects of different E-SERVQUAL parameters on quality of online learning classroom as well as on the overall students' satisfaction. The third link is the quality of online learning considered as an outcome of overall students' satisfaction. These three links are important because they suggest how students' satisfaction, how the dimension-specific of service quality factors can shape this construction and their association in the online learning in tertiary education. These links will be examined in turn.

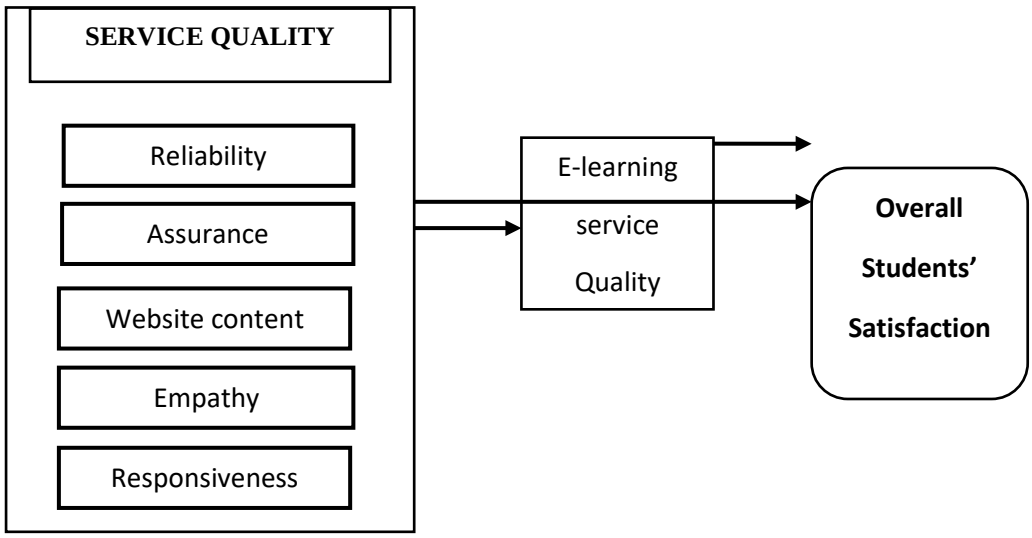

Figure 1: Conceptual Framework source: self-constructed

Hypothesis development

All of our constructs (as well as the hypotheses in the following section) are based on the precepts of the principles of modified SERVQUAL as discussed above. We used previously validated questions from past research, wherever possible (see Table 1). We adopted SERVQUAL used by (Udo et al., 2011) because it is the comprehensive scale that has been modified to reflect online learning environment. However, we replace ‘‘Tangibles’’ with ‘‘website content’’ to reflect the online environment more appropriately. The ‘‘Website Content’’ dimension has been used in previous studies (Cao et al., 2004; Hongwei Jiang & Zhang, 2016; Santos, 2003; Udo et al., 2011). The model that emerges is shown in Fig. 1. While items in the ‘‘Satisfaction’’ construct (e.g., I am satisfied with e- classes) the ‘‘E-Learning Quality’’ construct is specific to the type of service which is delivered in service environment.

Based on the proposed research model, a survey instrument was developed to collect data to test the study hypotheses. The original SERVQUAL construct was measured using a 13-question instrument that had previously been utilised in other studies (Cao et al., 2004; Stodnick & Rogers, 2008a; Udo et al., 2011). The four original components of SERVQUAL (Assurance, Empathy, Responsiveness, and reliability) were taken from (Gopal et al., 2021; Stodnick & Rogers, 2008b; Udo et al., 2011) but merely edited to reflect and fit online learning environment. The first set of assumptions is based on SERVQUAL's original four components are as:

H1: Assurance is not related to students satisfaction of e-learning quality.
H2: Empathy is not related to students satisfaction of e-learning quality.
H3: Responsiveness is not related to students satisfaction of e-learning quality.
H4: Reliability is not related to students satisfaction of e-learning quality.

Website Content is the layout of information and functions that depict the overall firm presence and its public image affect how a customer perceives web service quality (Gopal et al., 2021). The four items for this measure were taken that reflect overall perceptions of quality, clarity of instruction, updated information, and features on the website and the overall appeal of the website. (Saxena et al., 2021) argues that effective website content can positively influence customer attitudes toward the quality of the web-based services that they receive.

H5: Website content is not related to students’ satisfaction of e-learning quality.

Measures of online service quality during this covid-19 pandemic have been developed in previous studies (Ali et al., 2021; Jameel et al., 2021; Haozhe Jiang et al., 2021; Shahzad et al., 2021). This concept assesses the student's total e-learning experience, including overall enjoyment and satisfaction with the service provided. We adopted three items from (Gopal et al., 2021) construct is very similar to the one used in this study. Our hypothesis related to learner’s satisfaction is:

H6: Online students’ perceptions of e-learning quality are not associated with the students’ satisfaction with the learning experience.

Table 1 Construct Sources

Hypothesis	No. of items	Source
H1-H4	13	(Cao et al., 2004; Stodnick & Rogers, 2008a; Udo et al., 2011)
H5	7	(Gopal et al., 2021; Saxena et al., 2021)
H6	5	(Ali et al., 2021; Jameel et al., 2021; Haozhe Jiang et al., 2021; Shahzad et al., 2021).

METHODOLOGY

Data collection and survey instrument

As propounded by past literature, the analyses of how students are satisfied with virtual learning. Therefore, we chose to adapt measurement scales by (Alzahrani & Seth, 2021; Parasuraman et al., 2005; Stodnick & Rogers, 2008b; Udo et al., 2011) to measure online learning service quality as multidimensional constructs. Criteria for selecting items from these instruments were based on various previous studies on service quality in different settings, online customer service quality. These elements were then adjusted to fit the e- learning environment. The authors consequently developed a 37-item questionnaire to study e- learning service quality. Addition to this, the instrument included five item each to measure overall service quality, student satisfaction with online learning. A comprehensive assessment of the items of this preliminary scale was then carried out using group of students who had e- learning experiences of at least from past six months. Based on the feedback and suggestions, 4 items were removed. The remaining items were semantically corrected for completeness and clarity. The recalibrated scale was then sent again to the group for consideration to make sure that the revised preliminary scale had content validity. The resulting questionnaire had 33 items, of which 24 items measured student perceived e- learning service quality which was on the basis of students past 6 months e- learning experience. In addition, 5 items measured overall e-learning service quality, 4 items measured overall student satisfaction. The questionnaire used the five-point Likert scale where 1 represented “strongly disagree” and 5 represented “strongly agree.” The respondents were asked to select the scale based on their knowledge and perception of each statement in the questionnaire.

Sample and Data analysis

The sample consists of students of a deemed university in the northern India. Convenience sample was considered reasonable for the study. The questionnaire was filled by students who had been attending online classes offered by the university from past six months during pandemic. Specifically, asked students to fill questionnaire using emails. 372 questionnaires were received. Out of which 18 were invalid due to duplicity and incomplete information, at last 354 responses were considered for final analysis. SPSS 21 was used to perform various statistical analyses. Statistical techniques applied for validating hypothesis and concluding research results are descriptive statistics, reliability analysis, factor analysis and regression. Reliability test and factor analysis were used to filter factors. Multiple regression was used to evaluate the impact of individual factors of SERVQUAL on overall perceived e-learning service quality and studet satisfaction.

Validity test

The test is divided into structure validity and content validity. The questionnaire scale utilises substantial literature as a reference to ensure excellent content validity. The KMO (Kaiser–Meyer–Olkin) test and the Bartlett test both passed the structure validity. When the KMO number is greater than 0.5, the questionnaire has passed the validity test. The validity test results are provided in Table 2.

Table 2 Validity test results

Dimensions	**KMO**	**Bartlett test of sphericity**
Reliability	.774	.000
Assurance	.702	.000
Responsiveness	.692	.000
Empathy	.699	.000
Website content and privacy	.835	.000
E-learning service quality	.826	.000
E-learning overall student satisfaction	.867	.000

Respondent Profiles

Table 3 shows the demographic profile of the sample. As shown, female students in the survey accounted for 53% while male students accounted for 47% of the respondents. Students in the age group 18-22 accounted for 68%; the

23-25 age groups accounted for 28%; the 26-28 age group accounted for 3%. Students enrolled in bachelors of vocational (B. Voc.) course were 52%, BBA accounted for 34.5% and MBA were 13.5%.

Table 3 Demographic profile of respondents

Classification	Frequency	Percent
Gender (n-354)		
Male	158	47
Female	196	53
Age (n=354)		
18-22	242	68
23-25	100	28
26-28	12	3
Courses(n=354)		
B.Voc.	184	52
BBA	122	34.5
MBA	48	13.5

Measurement model Analysis

The main goal of this study was to look into the elements that influence student satisfaction with online classes during the COVID–19 epidemic. The quality factors for e-learning services were determined using principal component factor analysis. The descriptive, multivariate statistics of the items were evaluated before doing factor analysis, and no outliers were found. A Bartlett sphericity test (KMO) was performed to determine whether the data was suitable for factor analysis. After running the first principle component analysis, 4 items were excluded because they had low-value cross-loadings. 33 items were analyzed. All of the items had a high loading on one factor and a low loading on the others, indicating that structure and content validity were both met. The dependability of individual items is determined by calculating a simple correlation. (Tabachnick et al., 2007) proposed that items are dependable when the standardised loadings value is more than 0.55, and all of the items in Table 4 are reliable.
Table 4 shows the five factors:

1. Reliability
2. Assurance
3. Responsiveness
4. Empathy.
5. Website content.

Table 4 Factor loadings and Cronbach Alpha

Factor	Loadings	Cronbach alpha
Factor 1: Reliability		.771
Online course materials are valuable	.775	
Course materials are practical in real life	.742	
Assignments are sufficient in length and difficult	.748	
Instructors consistently provide good lectures	.819	
Factor 2: Assurance		.831
Instructors have sufficient knowledge	.839	
Instructors are well organized and prepared	.886	
Instructors answers all question thoroughly	.838	
Factor 3: Responsiveness		.757
The university resolves regarding online classes	.831	
The university has convenient office operating hours	.831	
University staff gives me prompt service	.801	
Factor 4: Empathy		.780
Instructors creates environment for interactive participation	.811	
Individual student is given attention during online classes	.853	
I feel motivated to study during online classes	.841	
Factor 5: Website content		.837
Course materials are organized	.818	
College website have up to date information	.801	
Website Information is accurate	.807	

My online transactions are always accurate	.852	
My personal information is safe	.891	
Online transactions through university website are safe	.881	
I feel safe in providing sensitive information for online transactions	.848	
E- learning service quality		.866
E-learning course materials are up to date	.837	
E- classes enhanced my learning	.854	
E- classes are easy to access	.800	
E- classes are time savy	.845	
E- classes resulted in my academic success	.697	
E- learning Overall student satisfaction		.938
I am satisfied with e- classes	.921	
I have enjoyable experience	.909	
I would recommend others also	.931	
I have overall success from e- classes	.910	

Regression Analysis

The main purpose of this essay is to see if there are any correlations between different components of e-learning service quality and overall e-learning service quality and e-learning satisfaction. Overall e-learning service quality and overall e-learning satisfaction were the dependent variables, whereas five characteristics of virtual learning service quality were the independent factors. Variables such as gender and age were included in the multiple regression equations for analysis to control the impact of demographic variables. It should be noted that F statistics were used to measure the framework's overall fit. Overall e-learning service quality, as well as e-learning satisfaction, were all statistically significant at p 0.001. (see Tables 5 and 6).

The results of the regression analysis between SERVQUAL dimensions and satisfaction are shown in Table 5. The model accounted for 45.4 percent of the variability in the dependent variable (F = 33.487, p 0.001). Two independent characteristics, reliability and empathy, are statistically significant and favourably connected with the quality of e-learning services. Because empathy has the largest standardised beta, it has the most influence, followed by reliability. The other three dimensions were not statistically significant: assurance, responsiveness, and website content.

Table 5 Regression analysis results

Independent variable	Standardized coefficients beta	t-value	p-value
Reliability	.307	3.327	.001***
Assurance	-.060	-.737	.462*
Responsiveness	-.043	-.614	.540*
Empathy	.408	5.224	.000***
Website content	.117	1.293	.198*

Notes: Notes: Dependent variable: student satisfaction (F = 33.487, p < 0.001, adjusted R2 = 0.450, R2 = 0.464); *p < 0.1; **p < 0.05; ***p <0.001

Table 6 summarises the regression analysis results regarding the link between service quality factors and e-learning service quality. The model explained 59.5 percent of the dependent variable's variability (F = 56.72, p 0.001). There were four independent variables that were statistically significant and positively connected to e-learning service quality: reliability, responsiveness, empathy, and website content.. With the highest standardized beta, website content is highly influential followed by empathy, responsiveness and reliability. The variable, assurance is not statistically significant at p<0.05 in the regression model.

Table 6 Regression analysis results

Independent variable	Standardized coefficients beta	t-value	p-value
Reliability	.188	2.347	.020**
Assurance	-.009	-.133	.895*
Responsiveness	.163	2.678	.008***
Empathy	.248	3.645	.000***
Website content	.321	4.1	.000***

Notes: Dependent variable: overall e- learning service quality (F = 56.729, p <0.001, adjusted R2 = 0.585, R2 = 0.595); *p < 0.1; **p < 0.05; ***p < 0.001

Correlation Analysis results

For the two variables, the correlation coefficient analysis technique was used to answer this question. Table 7 reveals that overall e-learning service quality and e-learning satisfaction have a statistically significant and positive connection (the correlation coefficient 0.748, $p < 0.01$).

Table 7 Correlation between e-learning service quality and e-learning satisfaction

	E- learning service quality	Overall e- learning satisfaction
E- learning service quality	1	.748
Overall e- learning satisfaction	.748	1

DISCUSSION

The purpose of this study was to explore the factors that affect students satisfaction regarding online classes during the pandemic period of COVID–19. As we have noticed, education sector is undergoing severe changes in which instruction are delivered, which requires to study understanding of e-learning quality. Because no one knows how long the pandemic will last, the teaching style has been switched to online mode. Despite the fact that some of the educators were not tech-savvy, they upgraded their skills in order to deal with the unforeseen situation (Gopal et al., 2021). This paper was motivated by (Udo et al., 2011) who used SERVQUAL in online setting to know the quality of student experience of online classroom. We have measured this amid covid-19 pandemic.

Previous studies, such as (Asogwa et al., 2014; Gorgodze et al., 2019; Stodnick & Rogers, 2008b; Tan & Kek, 2004; Udo et al., 2011) literature focused on the satisfaction of users normal use of online education platforms when there was no public health disaster such as COVID-19.

When comparing the current study to previous research, previous studies looked at the elements that influence student satisfaction in the traditional schooling framework. The current study, on the other hand, was done during India's shutdown time in order to uncover the key aspects that influence students' happiness with online lessons. The outcomes of statistical analysis showed that there are 5 main elements that measure e-learning service quality: reliability, responsiveness, assurance, empathy and website content. These factors also have unique attributes found in the e-learning environment during pandemic.

First factor, “Empathy” on the basis of results, highest coefficient beta has the most positive influence on how learners perceive e-learning quality. The application of e-learning service quality concept is one of the major contributions of the current study. The shows that students are given individual attention during online classes and they are motivated to study online during covid-19. Students also demand an e-learning environment conducive to robust connections between the professor and the students because of COVID-19's considerable social influence. Instructors who prepare tasks and examinations for students to gauge their academic performance are highly appreciated by pupils.

Second, reliability dimension addresses the resources that must be utilised in the classes for the course. Teachers who were formerly typical offline educators are now online educators. Online learning content needs to be well-organized, informative, and practical. Furthermore, these learning materials must be chosen in accordance with student learning needs and should present some challenge to encourage students to keep studying. Meeting the needs and requirements of students in terms of information search, registration, and online course preparation should be done in a timely, accurate, and efficient manner.

Third, responsiveness dimension addresses in order to address student issues, colleges must have an online office that is responsible for student enquiries, with working hours that are convenient for students. Students must always receive services that are consistent with what was promised in a prompt, accurate, and timely manner. In order to have strong e-learning service quality seen by the students, which in turn is very credible to lead to student happiness, the student interests must be carefully examined.

Fourth, assurance dimension is directly related to the certainty of the Students who take part in e-learning want lecturers with a lot of experience in the field, well-prepared lectures, and a genuine interest in their well-being. Prior to, during, and after e-learning, an e-learning system is used to implement and complete e-transactions. Students want to see their inquiry in the e-classroom.

Finally, the website content and privacy factor focuses primarily on the content on the online system's website must be well-organized, easy to find, and correct. Students may struggle to traverse the pages if this is not done, and they will be unable to complete the essential transactions. The job of the lecturer also pertains to the protection of a student's privacy and sensitive information. If this personal and financial data is stolen or misused, the ramifications for scholars

and the university will be enormous. As a result, colleges must constantly improve their security systems using complex algorithms in order for students to have faith in the e-learning system in general and the security system in particular.

Overall, the students thought that online education was beneficial to them, despite the fact that it was their first encounter with online lessons during the Covid-19 pandemic (Agarwal & Kaushik, 2020; Rajabalee & Santally, 2021). Online instructors must be enthusiastic about developing authentic educational tools that actively connect students and encourage them to achieve their full potential. Teachers and students have equal responsibility for improved academic performance.

Relative Importance of Each Factor of E-Learning Service Quality

As a result of the COVID-19 circumstance, the most essential features of this article are to determine the various implications of each e-learning service quality dimension on total e-learning service quality perceived by students, as well as e-learning satisfaction. Universities will be able to conduct quality improvement projects more effectively if they do so. There are four criteria that have positive and statistically significant effects on overall e-learning service quality, as assessed in the above-mentioned results. Reliability, responsiveness, empathy, and website content and privacy are evaluated in decreasing order of importance. There are two variables that have a statistically significant beneficial impact on e-learning satisfaction. These factors are ranked in decreasing order of importance: Reliability and empathy.

Reliability, responsiveness, website content, privacy, and empathy are the four most critical elements determining e-learning service quality, according to the study. Both the quality and pleasure of online services are influenced by two basic factors: reliability and empathy. As a result, institutions should address these criteria in order to improve student satisfaction with e-learning. In addition, e-learning empathy positively effects e-learning satisfaction and responsiveness positively effects e-learning service quality.

CONCLUSION

There is very little research on how to determine online learning service quality during Covid-19 pandemic. This study collected student data on e-learning in Indian higher educational institute during the COVID-19 pandemic. After this study we conclude that to improve e-learning service quality, the first step is to identify dimensions that make up e-learning service quality based on students experiences and perceptions. This study identifies five dimensions based on the old construct given by (Parasuraman et al., 2005) that make up e-learning service quality. To improve overall e-learning service quality during pandemic, universities should be interested in all of the five factors. However, to gain competitive advantage in a fierce competition environment among universities characterized by limited resources, universities should focus on three factors, empathy, reliability and website course content, to achieve the highest online service quality.

Additionally, this research shows that there are four factors, empathy, reliability, responsiveness and website course content, which contribute to e-learning satisfaction. There appears to be a consensus about the great potential benefits of e-learning. However, not all colleges are successful in putting their e-learning programmes into action. This failure can be attributed to a variety of factors. One of the key causes is that many institutions do not treat students as consumers who should be treated with care. To put it another way, the quality of e-learning services does not satisfy the needs of clients - students. As a result, universities must have special approaches to increase e-learning service quality in order to get a competitive advantage in the field of e-learning. Finally, this study demonstrates the links between overall e-learning service quality and e-learning satisfaction. This finding is consistent with other research on the subject of online and traditional services in general.

LIMITATION OF THE STUDY AND FUTURE WORKS

There are some drawbacks that exist and can be studied further. This study only takes students perception regarding online learning. The future researchers can include perspectives of teachers to make more generalized results. Also, the teachers performance can also be checked with similar kind of conditions. The nature of this research is cross-sectional. To overcome this constraint, future study could employ a longitudinal approach. The results cannot be applied to other samples because the data was obtained from a single university. Country wise comparison can be done to understand students perspective.

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APP BASED LEARNING PLATFORMS AND BEHAVIORAL INTENTION OF UG & PG STUDENTS' TOWARDS USAGE

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ABSTRACT
App based online learning platforms are gaining popularity and students are frequently using them. These Apps were web 2.0 technology based modern social media platforms. It is very useful for students learning and skill development. Primarily, the design goal for research was to explore students' perception towards these Apps, their usability and students' inclination. It is important to examine whether such Apps are beneficial for students' or not. This study also highlighted the students' attitude towards the usage of information communication technology and their perception towards these Apps. To conduct the study we have opted latent variables from Technology Acceptance Model (TAM) and Behavioral Intention scales. We merge them and framed the scale as per our research objective. Model has been developed and Confirmatory Factor Analysis (CFA) was used to measure the variables, which tells how well they are fitted. A structural Equation Modeling (SEM) technique was used to evaluate the proposed model. Based upon the statistical output, hypotheses were tested and conclusion drawn. 206 respondents were considered for the analysis. We found that these Apps are flexible and convenient platforms of learning which leads to development of positive attitude towards usage of such Apps. Over all students' attitude and self driven motivation creates positive behavioral intention towards the use of such Apps.
Key Words: Mobile Apps, online learning, Social media, TAM, UA and Behavioral Intention

Introduction

In this dynamic era when everything is changing so fast, the individual learning perspective also sifting form syllabus-based education (limited topics only) to knowledge & skill based education. Innovation and effective learning needs collaboration, interaction, and resourcefulness that must have the capability to enhance learner's understanding. The classroom-based education facilitates only limited and prescribed amount of information and time-bound activity but learning is limitless and it must be student centric, where student have authority to learn and excel his/her knowledge based on their requirement or interest. It is also not a time-bound activity. Learning is an interest based; beyond of time-bound, not only limited with few topics and place-bound activity. Due to such reasons large number of online learning Apps were emerged and their numbers are increasing day by day.

The App based self administered social media learning platforms are gaining popularity in India, and a large number of students are doing their study with the help of such Apps, commonly these are student centric content based social media platforms that supports regular learning. For "App based self directive learning" students' attitude towards the acceptance of such apps for learning purpose and the ensuing behavioral intentions towards its usage for learning is important. The centrality of research is "students' attitude & behavioral intentions" towards the usage of such apps for learning purposes. The App based social media learning platforms are easy to collaborate, content share, interact, innovative, problem solving and flexible in nature.

Primarily the study focuses on graduate and postgraduate students because they are mature enough and understand the pros and cons of App based and online learning social media platforms.

The understandings of students' attitude and intention towards such Apps for learning purposes will definitely enhance their conceptual and behavioral understanding towards the use of such technology driven learning platforms.

Literature Review

App based online learning or student centric content based online learning sites or Social media learning has become an integral part of human life especially among university students', it also boost up the multitasking, with the help of online learning platforms the academic learning can be increased. Without proper knowledge and understanding of technology as well as BI towards the usage of technology creates major hindrance in study and understand the right use of social media learning platforms(Lau, 2017). Social media learning and online learning fosters the knowledge of service receiver and increase their awareness about the object or learning concept. It creates a positive environment for the object and enhances individual and social learning. (Garcia-Morales, Martín-Rojas, & Lardón-López, 2018). Collaborative learning in recent days became global phenomenon with the help of social media and other online learning platforms. Group interaction and combine study can be done globally with the help online learning media. (Al-Rahmi, Alias, Othman, Marin, & Tur, 2018). The students were pursuing or completed higher education; mature enough to use content based or students centric online learning sites, social media, blogs, wikis for academic and personal development through positive learning. (Chawinga, 2017). In this century, the role of online learning has been increased, it's not only associated with taking help or support though online portals, but it also influenced the learning and academician and institutions also started using online learning platforms as a tool of interaction with students. (Krutka, Carpenter, & Trust, 2017). Such sites became the tool to interact and associate with academician and educational institution that increases the chances of getting the right direction and guidance to the students for their knowledge and career enhancement(Carpenter & Krutka, 2014). Students' can demand self-disclosure on learning contents on these sites and interact with experts, which influence the classroom environment and students' positive learning. (Mazer, Murphy, & Simonds, 2007). Self driven online learning Apps, which also known as, web 2.0 learning tools also supports the classroom learning. It helps in the development of a positive relationship between the faculty and students. Content specified online learning platforms enhance students' learning through planned behavior. (Ajjan & Hartshorne, 2008). Knowledge management can be utilized in a better way to interact with learners that enhance the individual creativity(Sigala & Chalkiti, 2015). Web 2.0 supported online platforms including Social media has created a digital world. This digital world has tremendous potential to enhance formal and informal learning. (Greenhow & Lewin, 2016). Online learning is the cheapest ,effective and student driven medium of information sharing, it helps in social connecting and boosts up the social learning, understanding, positive learning attitude, right behavior and culture if taken positively(Mao, 2014). Online learning Apps or student centric content based sites, and its positive impact on the educational performance of student can be achieved by the integrating online knowledge centers and learners(R. Wang, Scown, Urquhart, & Hardman, 2014). Knowledge management and information technology enhance online learning platforms, and online learning platforms enhances the way people communicate and collaborate with each other. (Kane, 2017). A leaky knowledge management system of students driven online learning platforms provides the source to access the information by the learner and help them to enhance their learning. (Leonardi, 2017). The dynamic environment in education brought innovations, right attitude, positive BI and constructive changes in the modern education system. Now education is not only limited to the classroom, but experts and students can also interact and focus on self-learning through online learning digital media platforms. Use of students driven social media learning platforms has been increased(Dabbagh & Kitsantas, 2012). Open learning social media platforms and MOOCs are played the vital role for distance learning educators or learners, such social media platforms are playing a vital role to guide them. (Kaplan & Haenlein, 2016). So many people started using online learning platforms and such Apps are getting popularity. So, professional, teachers, subject experts and students were started collaborating on online learning platforms for their learning requirements and development. it increases the social collaboration among identical learners boundless and limitless. (Chugh & Ruhi, 2018). The number of executive learning and collaborative research are increasing day by day, it became possible just because of availability of online learning supported social media platforms were students and experts can collaborate with each other. (Zhang et al., 2015). Online learning Apps and sites which enable new kind of social media platforms, that opened a widespread business opportunity for new firms. Through online learning sites, Apps and social media platforms, they are collaborating for learning and promoting new ideas and such ideas helps students to enhance their learning(Garcia-Morales et al., 2018).

In general, people have tendency to accept innovative and latest technologies. They have shown positive inclination toward the usage of technology to achieve their personal or social goals. It may be either related to academic or non-academic goals. The same applies for app based social media learning and it is supported by various theories such as Rogers & Monsell (1995): Theory of Diffusion of Innovations, Goodhue, and Thompson (1995)Theory of Task-technology fit, Ajzen & Fishbein (1975) Theory of Reasonable Action, Icek (1991) Theory of Planned Behavior, Taylor & Todd (1995) Decomposed Theory of Planned Behavior and (Davis, Jr. (1980) Davis, (1989) Technology Acceptance Model.

The above literature highlights the two major aspects of App based & student centric social media learning platforms. First, understanding the importance of information communication technology and its role for shaping

the learner's positive attitude towards its usage and second, how this modern app based learning platforms influences the learner's Behavioral Intention (BI) for knowledge enhancement. The proposed research model is based upon the above literature review.

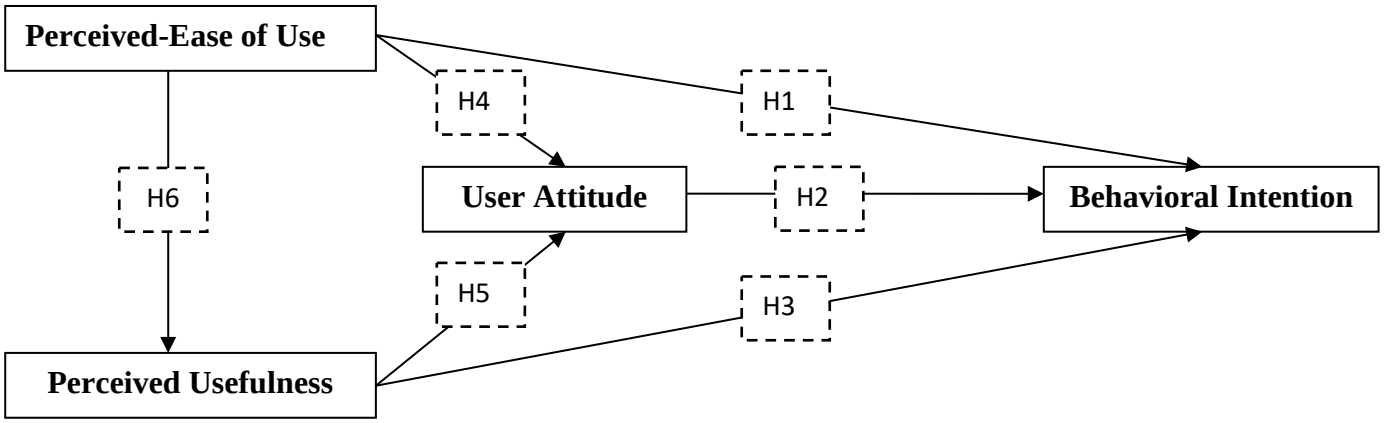
Model and Hypotheses Development

The conceptual model was framed on the basis of two old theories: which are being used to understand the learner's BI towards the usage of information communication technology for their learning enhancement (a) Fishbein and Ajzen, 1975: Theory of Reasonable Action, (b) Davis, Bogozzi and Warshaw, 1989: Technology Acceptance Model (TAM). Based upon the research objective hypotheses were developed.

Perceived-Ease of use (PEU): Perception of individuals, which leads to development of attitude for the use of ICT technology or ICT system;, user believes that using this system will enhance their learning capability(Huang & Liaw, 2018). PEU is closely related with BI(Park, 2009), UA(Panigrahi, Srivastava, & Sharma, 2018) and PU(Dumpit & Fernandez, 2017). So, the following hypotheses were proposed.

H1: PEU has significant and positive impact on the BI of student's using online learning App for their learning.
H4: PEU has significant and positive impact on UA of student's using online learning App for their learning.
H6: PEU has significant and positive impact on PU of student's using e-learning App for their learning.
User Attitude (UA): it is an individual's viewpoint that indicates their favor or disfavor, it is based upon the person's affective, cognitive and behavioral components(Mao, 2014). UA is closely related with BI(Park, 2009). So, the following hypothesis was proposed.
H2: UA has significant and positive impact on BI of student's using online learning App for their learning.
Perceived Usefulness (PU): It is a view point of individuals subjective and positive idea about the expected benefits or positive outcome after using the specific technology or systems(Liao, Huang, Chen, & Huang, 2015). PU is positively related with UA(Park, 2009) and BI.
H3: PU has significant and positive impact on BI of student's using online learning App for their learning.
H5: PU has significant and positive impact on UA of student's using online learning App for their learning.
Behavioral Intention (BI): Based upon the conscious plan, it is a degree on which the course of action depends either the person will perform or not to perform specific task(Ajjan & Hartshorne, 2008).

Figure-I: Research Model



Research Methodology

Respondents and Data Collection Procedures

The data was collected through digital and physical platforms. Under Graduation and Post Graduate students were consider as a proposed sample. Proposed research area was limited to Easter part of India and both government and private universities students were consider for research. Planned "five point likert scale" was considered for data gathering. After filtering and finalizing total 206 respondents were find suitable for research, out of which 141 were male and 65 were female. They use both free and paid sources for online learning. Out of 206 respondents, 14 said they always use paid sources of learning, 30 often use paid source for learning, 102 said sometimes they use paid source for learning, 34 said they rarely use paid sources for learning and 26 said they never use paid sources for online learning. 98 respondents were enrolled in UG courses and 108 were enrolled in PG courses.

Scale development and Data Analysis Technique

Our outcome variable is BI of online learners among students of UG and PG. to measure latent variables five point liker scale were framed and the variables we identify as: PEU (05 items), PU (03 items), UA (04 items) and BI (05 items).

The Confirmatory Factor Analysis (CFA) was considered and Structural Equation Modeling (SEM) technique was used for data analysis and model testing. SmartPLS 3.0 software was used for data analysis. One item BI-3 were deleted from BI scale because it was cross loaded, and finally 16 items out of 17 were consider for further data analysis, conceptual model justifying and hypothesis testing. The questionnaire was developed & modified as per our research objective and was adapted based on various published research papers (Davis, 1989)

Model measurement and Assessment

To measure the model: first we checked the "reliability and validity" of the scale (Table: I). Convergent and Discriminant validity (Joseph F. Hair, G. Tomas M. Hult, Christian M. Ringle, 2017) measured and checked to identify the strengths with the indicators of the constructs. Cronbach's Alpha and Composite Reliability (CR) has been checked to identify the reliability of the scale. It is visible that the Cronbach's Alpha value is more that 0.60 (Worthington & Whittaker, 2006) and CR value is 0.60 (P. Bagozzi & Yi, 1988). To measure convergent validity factor loading and average variance extracted (AVE) are used. Factor loadings accepted value is 0.50 or above and AVE accepted value is also 0.50 or above (Joseph F. Hair, G. Tomas M. Hult, Christian M. Ringle, 2017), it means construct has capability to explains at least 50% variance of the items. To measurement the discriminant validity Fornell-Larker Criterion (Table: II) and Heterotrait-monotrait (HTMT) ratio (In Table: III) were used. The Fornell-Larker states that the square root of each and every construct's average variance extracted (AVE) must have a greater value than the correlations with other latent constructs in data. Further we also checked HTMT, and it is found that the values were below the standard i.e. 0.90 (Fornell, C., & Larcker, 1981).

Table-I: Model Measurement and Results

S. No.	Variables	Items	Factor Loading	Cronbach's Alpha	Composite Reliability(CR)	AVE
1	**Behavioral Intention**	**BI1**	**0.727**	0.713	0.822	0.538
2		**BI2**	**0.821**			
3		**BI4**	**0.639**			
4		**BI5**	**0.735**			
5	**Perceived-Ease of Use**	**PEU1**	**0.741**	0.713	0.822	0.538
6		**PEU2**	**0.746**			
7		**PEU3**	**0.794**			
8		**PEU4**	**0.712**			
9		**PEU5**	**0.717**			
10	**Perceived Usefulness**	**PU1**	**0.799**	0.797	0.860	0.552
11		**PU2**	**0.675**			
12		**PU3**	**0.796**			
13	**User Attitude**	**UA1**	**0.789**	0.713	0.822	0.538
14		**UA2**	**0.812**			
15		**UA3**	**0.720**			
16		**UA4**	**0.747**			

Table-II: Discriminant Validity (Fornell-Larker Criterion)

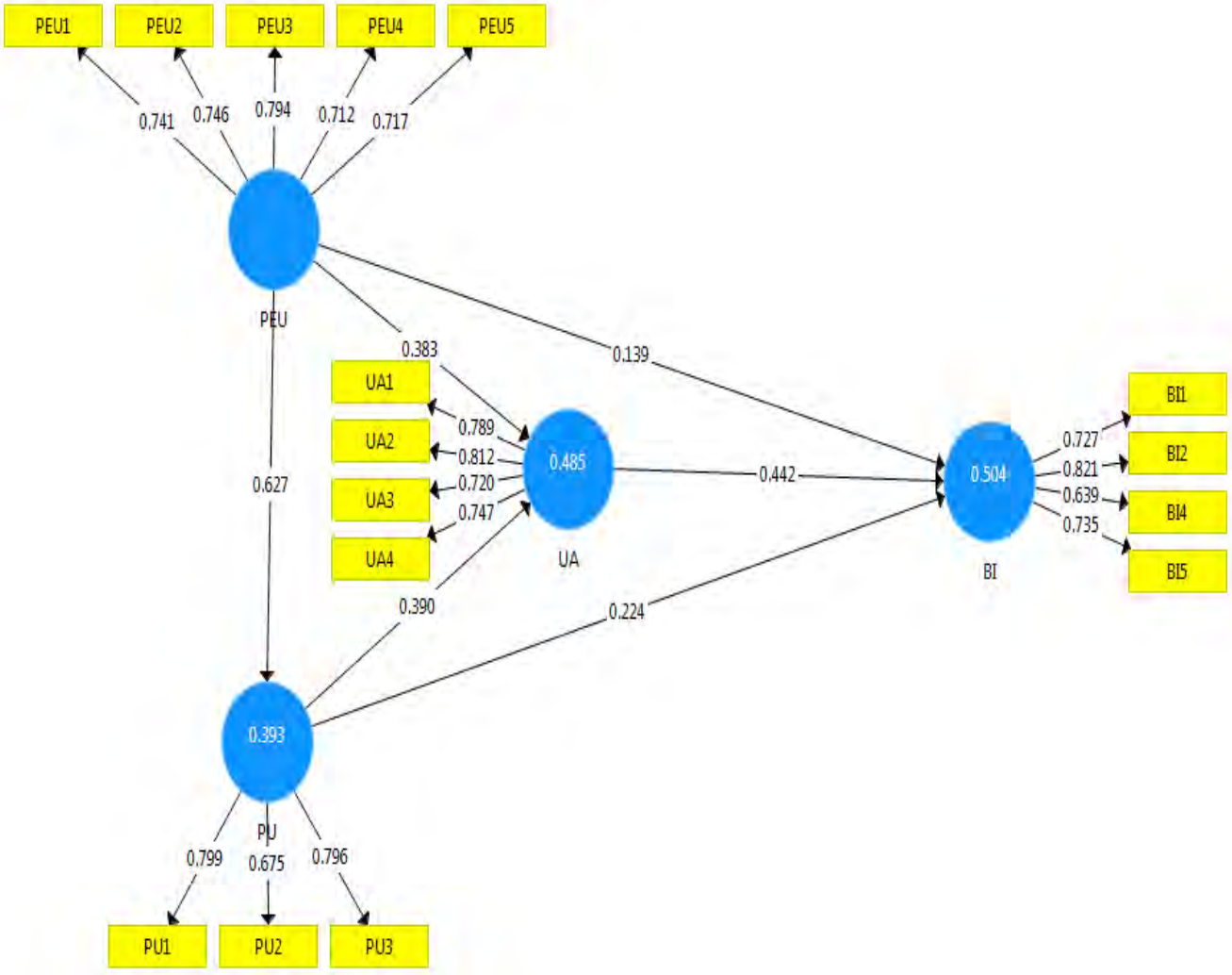
	BI	PEU	PU	UA
BI	0.734			
PEU	0.556	0.743		
PU	0.589	0.627	0.759	
UA	0.669	0.627	0.629	0.768

Table-III: Hetrotrait-Monotrait Ratio (HTMT)

	BI	PEU	PU	UA
BI				
PEU	**0.717**			
PU	0.886	0.883		
UA	0.878	**0.784**	0.886	

To check the structural model and relationship between the latent construct we followed the path suggested by (Joseph F. Hair, G. Tomas M. Hult, Christian M. Ringle, 2017). In SmartPLS 3.0 software we run Algorithm test to assess the model and Bootstrapping was run to test the hypothesis (p-value). Figure-2, figure-3 and table-4 reflect the outcomes of the analysis. P-value R2 (coefficient of determinants)(Hair, Risher, Sarstedt, & Ringle, 2019), which defines the relationship strength between the variables. Percentage value of dependent variables i.e PEU and BI positively integrates, it could explain 50.4%. PEU and PU integrates, it could explain 39.3%. PEU and UA positively integrates, it could explain 48.5%. Empirically we can see that all the hypotheses (H1, H2, H3, H4 and H5) were supported by the research data. All hypotheses were accepted.

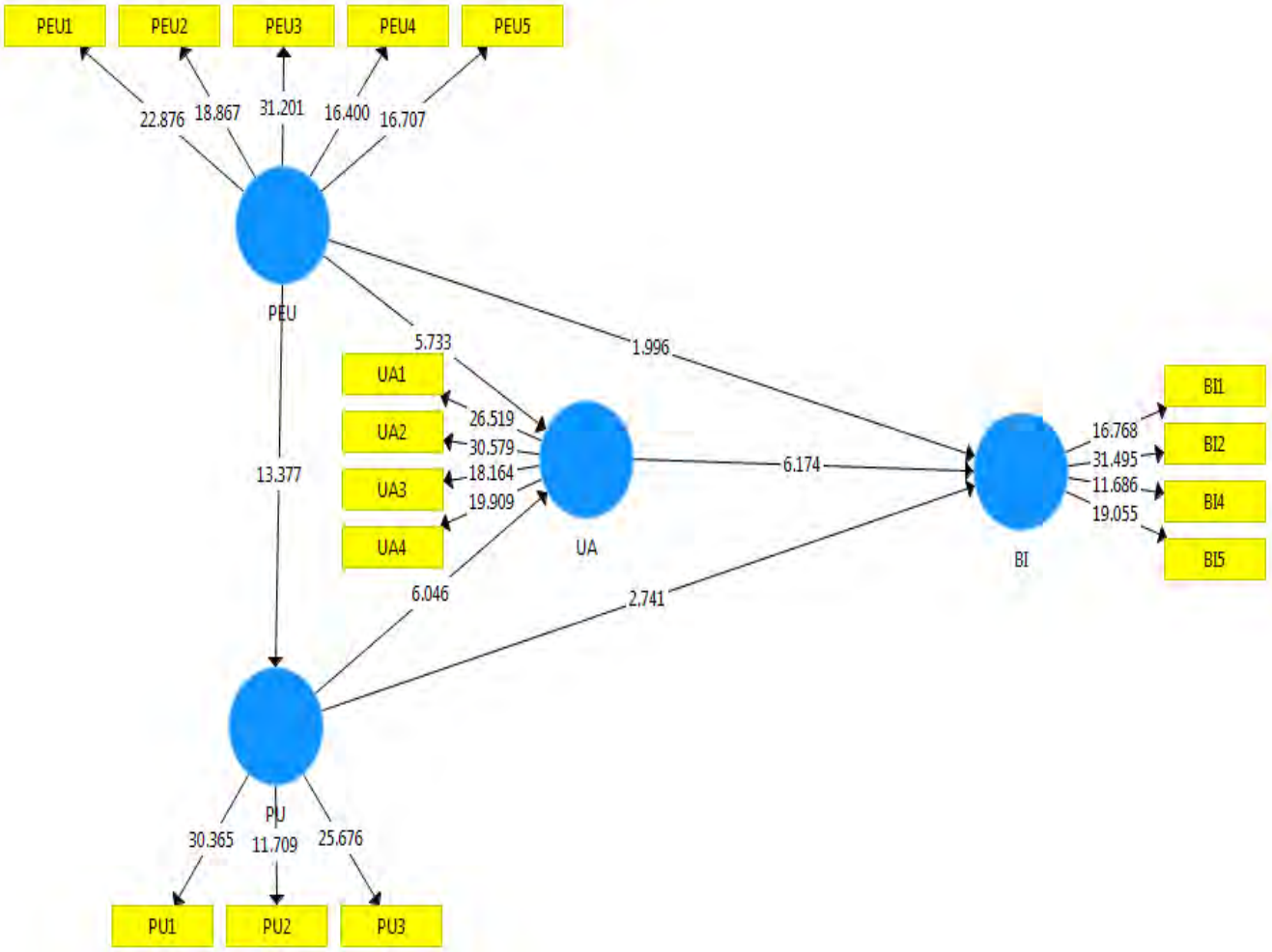
Figure-II: Path Coefficient Results



In output we can see the influence level and effect size(Joseph F. Hair, G. Tomas M. Hult, Christian M. Ringle, 2017) i.e PEU significantly influence the BI (β=0.139, t=1.996, p<0.05, f^2=0.020), PEU significantly influence PU (β=0.627, t=13.377, p<0.01, f^2=0.647), PEU significantly influence UA (β=0.389, t=5.733, p<0.01, f^2=0.173), PU significantly influences BI (β=0.224, t=2.741, p<0.01, f^2=0.052), PU significantly influence UA (β=0.390, t=6.046, p<0.01, f^2=0.179) and UA significantly influence BI (β=0.442, t=6.174, p<0.01, f^2=0.203).

The predictive relevancies of the variables are measured by Q2, the positive value more than zero of Q2 reflects there is an existence of predictive relevancy in the structural model. In this research we can see the Q2 values of BI, PU and UA are 0.245, 0.213 and 0.267 respectively, which indicates that there is existence of predictive relevancy in the structural model.

Figure-III: Bootstrapping Results



Hypotheses Tests

Table-IV: Hypotheses Testing Results

H		Std. Beta	Std. Error	t-Value	P-Value	Result	R^2	F^2	Q^2
H1	**PEU -> BI**	0.139	0.070	1.996	0.047	Supported	0.504	0.020	0.245
H2	**PEU -> PU**	0.627	0.047	13.377	0.000	Supported	0.393	0.647	0.213
H3	**PEU -> UA**	0.389	0.068	5.733	0.000	Supported	0.485	0.173	0.267
H4	**PU -> BI**	0.224	0.082	2.741	0.006	Supported		0.052	
H5	**PU -> UA**	0.390	0.065	6.046	0.000	Supported		0.179	
H6	**UA -> BI**	0.442	0.072	6.174	0.000	Supported		0.203	

Discussion

Here, our prime objective of the study was to evaluate the students' BI and their readiness towards the adoption of App based online learning social media platforms. As the App based online learning or social media learning is gaining popularity in elementary and higher education rapidly in India. Our study is restricted to higher education

perspective only. We developed and tested the hypotheses to evaluate students' BI towards the use of such learning tools, we checked the inter-relationship of students' PU, and students' attitude towards usage App based learning sources(Y. Y. Wang, Wang, Lin, & Tsai, 2019). It is important to underhand the students attitude and intention towards adoption of App based social media learning in higher studies, we can see the shift from web supported(Sarwar, Zulfiqar, Aziz, & Ejaz Chandia, 2019) learning to App supported learning.

It is found that PEU is significantly predicting the BI of the student. PEU influences the student's usage, understanding of the concept and nurture the learning environment(Huang & Liaw, 2018). PEU is successfully predict the PU, it is one of well established factor of TAM model, where it is indicted that the degree of inclination towards the usefulness of the information technology, in this study App based social media learning, perceived benefit is more and easy to use & understand. It the major cause of large number of students opt App based social media learning platforms for online learning(Alalwan et al., 2019; Dumpit & Fernandez, 2017). PEU predicts the UA successfully. It is proven in previous literatures that easier the use of source of learning increases usefulness, seriousness and commitment which directly leads to development of positive attitude towards the learning effectiveness(Shao, 2020). PU successfully predicts the BI of students' using App based social media learning platforms for their learning. Continuous usage and likelihood of App based social media learning is depends upon the long-term usefulness and positive intention towards the use of online learning platforms. Environmental characteristics of App based social media learning and individual learner's characteristics simultaneously have positive influence on the BI of the students'(Ozturk, 2016). PU is successfully predicting the UA. The major aspect of attitudes towards use of technology is learner attitude toward use, intention to participate and degree of preference, such positive attitude only be generate when learner have positive association of PU of technology or resources for their learning objective. Students know the benefits of using App based learning platforms for the learning success, this positive attitude has been developed because of the PU in students(Liao et al., 2015). UA successfully predicts the BI of the students for using App based social media learning. Two major aspects of motivation plays major role in development of positive BI of students towards App based social media learning. first is intrinsic motivation, student's e-learning self-efficacy which regulates their self paced e-learning activity and second is extrinsic motivational factor, such as social influence, get recognition from people, initiative for career development by getting chance to preparing well, skill & knowledge enhancement and getting competitive edge over others(Park, 2009).

Conclusion

App based social media learning and self driven online learning is gaining popularity in India and large number of learning Apps are grooming day by day. Large number of students are also attracting towards these digital mode of self driven Web 2.0 social media learning resources. Such Apps and social media learning platforms were offering contents on the basis of demands and needs of the students. It is quite interesting to study the students' BI towards the usage these Apps. Information communication technologies and behavioral aspects of students are two key driven elements of this study. With the help of TAM model and BI this study has been performed. It is found that technology adoption through ease of use & its benefits through usefulness is an important element. It helps students in development of positive attitude towards usage of such platforms for learning purposes. Positive attitude and overall benefits attracts students' towards the usage of such social media learning Apps for their learning purposes.

Limitation and Future Work

App based social media learning platforms and student centric content based online learning sites are new in India. So, multidimensional research can be done in this field. Various studies can be done in different age groups of students, different schools, different universities and disciplines or branches of students. Further study can be done by taking technology, infrastructure, resources and gender as a moderator & mediating factors etc.

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ASSESSMENT OF INSTRUCTIONAL RESOURCES FOR TEACHING AGRICULTURAL SCIENCE IN SECONDARY SCHOOLS IN OYO STATE

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ABSTRACT
Instructional resources are tools which can be used by the teacher to provide help and to encourage students learning activities. Such resources bring together man and material resources in a systematic cooperation to effectively solve educational problems. However, teachers do not always use instructional resources to complement their teaching and by implication, these resources are wasted. This study: (i) assessed the available instructional resources for teaching Agricultural science, (ii.) examined the functionality of instructional resources for teaching Agricultural science, (iii) investigated teachers' utilization of instructional resources for teaching Agricultural science and (iv) examined the influence of gender, experience and school ownership on teachers' utilization of instructional resources for teaching Agricultural Science in Ogbomoso.
Survey method was adopted, in this research, 217 agricultural science teachers were purposively sampled using questionnaires. The instrument for data collection were researchers designed checklist and questionnaires to elicit information from the teachers. The data were analyzed with statistics Package of Social Science (SPSS) based on gender and experience.
The findings revealed that:
1. majority of the secondary schools had school farms, agricultural science laboratory, specimens and samples, charts, textbooks, chemicals and simple farm tools.
2. only few of the available instructional resources are functional for teaching agricultural science
3. the functional instructional resources are adequately utilized for teaching agricultural science.
4. There was no significant difference in the use of instructional resources by male and female instructors when teaching Agricultural Science.

Teachers of Agricultural Science in Ogbomoso use accessible resources for successful teaching and learning, according to the study. Teachers' use of instructional materials for teaching Agricultural Science is irrespective of their gender and experience. Seminars, workshops should be organized by school administration to sensitize agricultural science teachers towards use of instructional resources to enhance their teaching.
Keys Words: Assessment, Availability, Instructional resources and Utilization

INTRODUCTION
Education is a tool for social, political, scientific, and technical change and growth. According to Iwu, Chibike, and Rachael (2013), education has the power to shape an individual's intellect, character, and physical abilities. It is the purposeful transmission of society's acquired knowledge, skills, and values from one generation to the next. According to Daramola (2016), education is a catalyst for societal change through instilling acceptable attitudes and values. Education is the process of aiding students in acquiring information, skills, appropriate attitudes, and

values that will enable them to become responsible citizens who will care for themselves, their families, and contribute to society (Zubairu, 2013). Education is an agent for development of an individual to change the society.

Education entails teaching and learning both within and outside of the classroom, with topics such as English, mathematics, basic science and technology, social studies, civic education, and agricultural science among those taught. Agriculture is derived from two Latin words: "ager" which means "field" and "cultura" which means "cultivation." Agriculture may be generally described as the art and science of producing crops and animals for human use. Botany, zoology, chemistry, genetics, physiology, geography, economics, and physics are among the pure and practical disciplines that make up agricultural science. Teaching of agriculture in schools involves a lot of activities, skills and requires a specialist teacher to be able to impart the necessary skills. The teacher of agriculture is a subject specialist trained to impart knowledge and skills in others (Ojoko, 2016). He is a professional who prepares his lesson well, presents them in a logical and interesting way, relates teaching to real life situation, employ use of adequate instructional resources and evaluates students' accomplishment

Education broadens people's knowledge and gives a better understanding of the world around and how things work, it reduces social and economic inequality, allowing progress to be equally shared, and it is a light that shows humankind the right direction to develop (Panneer, 2014). Education as an equalizer that transforms the society that pays special attention to its educational system. This is because any nation with an unstable or unhealthy education will not go far in the scheme of things globally and its citizens may be considered unqualified in any field of endeavor they pursue particularly in 21st century (Eziaghighala, Ogachi, & Urenyere, 2013).

Information and communication technology (ICT) is a set of instruments for producing, storing, processing, distributing, and exchanging data. ICT, according to Abdulghani, Abdulaziz, Khalid, and Hassan (2012), is a broad subject that encompasses the usage of radio and television, as well as newer digital technologies such as computers and the internet, which are extremely effective educational tools. Also, Soetan and Ominuta (2018) corroborated ICT as students centered tools that open up new possibilities for information seeking and also facilitates development through interaction with the use of technologies like cell phones, personal computers and the internet for people to work collaboratively at different locations.

ICT, according to Ibrahim, Olaoye, and Bello (2016), are technologies that are used for accessing, gathering, manipulating, and presenting information. These technologies include hardware such as computers and other devices, software applications, and connectivity such as internet access, local networking, infrastructure, and video conferencing. They are also systematic process which has to do with various ICT tools which consists floppy disk, CD ROM, DVD, flash drives, scanner, hardware and other software.

Ofoegbu and Onuzulike (2013) noted that ICT tools are essential tools in any educational system which has the potential of being used to meet the learning needs of individual student, promote equality of educational opportunities, increase self- efficacy and independence of learning among learners and improve teaching process. Teachers and students can access resources and communicate with expert and colleagues as well as make useful contribution to knowledge through the use of ICT tools.

Instructional resources are those resources which the agricultural science teacher can utilize to make teaching not only interesting and stimulating but relevant. The availability of teaching materials has been highlighted as a critical component in integrating agricultural science into secondary school curricula. A laboratory, farm workshop equipped with metal and woodworking equipment, gas and electric welders, power generators, fuel storage tank, tractors, combined harvester, science laboratory facilities, the school farm, a departmental vehicle and funds for running the department and cultivators were among the instructional materials used to teach agriculture in secondary schools (Amadi, 2015). Teachers can use instructional materials to help students through the learning process.

According to Wales and Richard (2015), the availability and usage of instructional materials would help pupils remember newly acquired facts. Emmanuel (2018) also stated that a well-planned and innovative use of visuals in the classroom may assist to alleviate apathy, augment the adequacy of texts, and raise students' attention by providing them with something practical to see, do, and think about. Secondary school teachers have long struggled with a lack of educational materials. What appears to be the case is that instructors have been unable to make effective use of available resources, implying that these resources are being squandered.

In crop agriculture, pure water sachets, old tins and split bamboo can be used for raising horticultural crops and nursery operations; mixture of kerosene wood ash and neem leaves may be utilized as insecticide to mention but a few. When such items are got from the community or local environment and used to teach the students, their

interest and curiosity will be aroused and sustained. This will eventually make the students to see agriculture as a practical subject rather than abstract. A lot of local or community materials are available for utilization in teaching agricultural science in schools. The effective use of community-based resources for teaching agriculture requires much more than the mere availability of resources in the host community. Availability of the resources here means those resources that the teacher can easily get, buy or find and use for the teaching and learning process. One important requirement is resourcefulness on the part of the teacher of agriculture. Resourcefulness is used to mean the quality of a teacher to involve the learners such that their interest in the subject may be enlivened (Ekpo, 2010).

Assessment is the process of evaluating the importance and functionality of instructional resources. Every instructional resource needs to be properly assessed to determine its effectiveness in the teaching and learning process. Utilization is the level at which the available instructional resources are used by teachers to teach agricultural science.

Statement of the Problem

The provision and procurement of instructional resources is not enough if it is not functional nor adequately utilized. There were report in the past whereby schools' heads just stored the resources supplied for instruction in the school store or the principals' office. Some of the school heads complained about the substandard of some of the resources while some complaint is on teachers' lack of technical know how to operate some of the instructional resources. In some cases, electricity source to power the resources is deficient. This study thus assessed instructional resources for teaching Agricultural Science in Secondary Schools in Oyo state.

Purpose of the Study

The main purpose of this study is to Assess Instructional Resources for Teaching Agricultural Science in Secondary Schools in Ogbomosho, Oyo State. Specifically, the study:

i. ascertained the available instructional resources for teaching Agricultural science;
ii. examined the functionality of instructional resources for teaching Agricultural science;
iii. investigated teachers' utilization of instructional resources for teaching Agricultural science;
iv. examined the influence of gender on teachers' utilization of instructional resources for teaching Agricultural Science.
v. examined the influence of teacher's experience on the utilization of instructional resources for teaching Agricultural Science.

Research Questions

The following research questions were raised to guide the study

i. What are the available instructional resources for teaching Agricultural Science in secondary schools?
ii. Are the instructional resources functional for teaching Agricultural Science in secondary schools?
iii. How do teachers utilize instructional resources for teaching?
iv. How does gender influence utilization of instructional resources?
v. How does teaching experience influence utilization of instructional resources for teaching Agricultural Science?

Research Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

H_{01}: There is no significant difference between male and female teachers' utilization of instructional resources for teaching Agricultural Science.

H_{02}: There is no significant difference between experienced and less experienced teachers' utilization of instructional resources for teaching Agricultural Science.

METHODOLOGY

Research Design

This is a survey-based descriptive research. A total of 250 agricultural science instructors were chosen with care. The study's instrument was a structured questionnaire that was divided into four components. The gender of the instructor, academic degree, and years of experience of the teachers were all elicited in Section A. Available (A), Not Available (NA), Functional (F), Not Functional (NF) were the response options for Section B, which sought information on the availability and functionality of instructional materials for teaching agricultural science in secondary schools (NF). In Section C, respondents were asked their thoughts on how agricultural science teachers use instructional tools. Strongly Agree- SA, Agree- A, Disagree- D, and Strongly Disagree- SD were the response possibilities. Finally, part D looked at the variables that work against using instructional materials to teach agricultural science. Strongly Agree- SA, Agree- A, Disagree- D, and Strongly Disagree- SD were the response possibilities.

Data Analysis Techniques

The information gathered was submitted to descriptive and inferential analysis methods. The data were analyzed using Statistics Package for Social Science (SPSS) version 23.0, and an independent t-test was performed to assess all of the study's hypotheses at a significance level of 0.05, with the findings provided in the next chapter.

DATA ANALYSIS AND RESULTS

Out of the entire 250 agricultural science teachers which were purposively selected for this research, research instrument which was retrieved from 217 agricultural science teachers were properly filled, returned in good form and was thus used for the analysis in this study.

Table 1: Demographic Data of Respondents based on Gender

Gender	Frequency	Percentages (%)
Male	105	48.4
Female	112	51.6
Total	**217**	**100.0**

Results in Table 1 indicated that 217 agricultural science teachers participated in the study out of which 105 (48.4%) were males while 112 (51.6%) were females.

Table 2: Demographic Data of Respondents based on Qualification

Qualification	Frequency	Percentages (%)
NCE	71	32.7
OND	16	7.4
HND	18	8.3
PGDE	36	16.6
B.Sc/B.Ed/B.A(Ed.)	61	28.1
M.Sc/M.Ed/M.A.	15	7.0
Total	**217**	**100.0**

Table 2 with respect to academic qualification reveals that 71 (32.7%) were holders of NCE, 18 (7.4%) were holders of OND, 18 (8.3%) were holders of HND, 36 (16.6%) were holders of PGDE, 61 (28.1%) were holders of B.Sc. / B.Ed/ B.A, and 15 (7%) were holders of M.Ed / M.Sc/ M.A.

Table 3: Demographic Data of Respondents based on Experience

Experience	Frequency	Percentages (%)
1-5 years	66	30.4
6-10 years	93	42.9
11 years and above	58	26,7
Total	**217**	**100.0**

Table 3 showed that 66 (30.4%) had between 1-5 years of teaching experience, 93 (42.9%) had between 6-10 years of teaching experience, and 58 (26.7%) had more than 10 years of teaching experience.

Results of the Research Questions

Four research questions were answered in the study using percentage and mean rating. Research questions 1 and 2 were answered using percentage, while research questions 3 and 4 were answered using mean rating. The outcomes of the analysis are reported in Tables 4 to 7.

Research Question 1: What are the available instructional resources for teaching Agricultural Science in secondary schools?

The result is presented in Table 4.

Table 4: Percentage Analysis of the Available Instructional Resources for Teaching Agricultural Science in Secondary Schools

S/N	Items	Available	%	Not Available	%	Remarks
1	Chemicals	180	82.9	37	17.1	Available
2	School farm	206	94.9	11	5.1	Available
3	Agricultural Science laboratory	202	93.1	15	6.9	Available
4	Rock and soil and samples	177	81.6	40	18.4	Available
5	Specimens of agricultural produce	185	85.3	32	14.7	Available
6	Farm machines and equipment	87	40.1	130	59.9	Not Available
7	Specimens of ornamental plants	171	78.8	46	21.2	Available
8	pH meter litmus paper	205	94.5	12	5.5	Available
9	Simple farm tools	213	98.2	4	1.8	Available
10	Specimens of monocotyledonous and dicotyledonous seeds	174	80.2	43	19.8	Available
11	Samples of animal feeds	166	76.5	51	23.5	Available
12	Specimens of insect pests	171	78.8	46	21.2	Available
13	Weeds specimen / weeds album	167	77	50	23	Available
14	Charts and pictures	211	97.2	6	2.8	Available
15	fishing trap	137	63.1	80	36.9	Available
16	Multi-media projector	88	40.6	129	59.4	Not Available
17	Laboratory Apparatus	191	88	26	12	Available
18	Specimens of endo-parasites and ecto-parasites.	140	64.5	77	35.5	Available
19	Forest products	158	72.8	59	27.2	Available
20	Textbooks	213	98.2	4	1.8	Available

Note: Not Available = 00 – 49%, Available = 50 – 100%

Table 4 showed the available instructional resources for teaching Agricultural Science in secondary schools. The available instructional resources for teaching Agricultural Science include chemicals, school farm, Agricultural Science laboratory, rock and soil and samples, specimens of agricultural produce, specimens of ornamental plants, pH meter litmus paper, simple farm tools, specimens of monocotyledonous and dicotyledonous seeds, samples of animal feeds, specimens of insect pests, weeds specimen / weeds album, charts and pictures, Fishing tools, laboratory apparatus, Specimens of endo-parasites and ecto-parasites, forest products, and textbooks.

Research Question 2: Are the instructional resources functional for teaching Agricultural Science in secondary schools?

The result is presented in Table 5.

Table 5: Percentage Analysis of the Instructional Resources Functional for Teaching Agricultural Science

S/N	Items	Functional	%	Not Functional	%	Remarks
1	Chemicals	147	67.7	70	32.3	Functional
2	School farm	200	92.2	17	7.8	Functional
3	Agricultural Science laboratory	171	78.8	46	21.2	Functional
4	Rock and soil and samples	175	80.6	42	19.4	Functional
5	Specimens of agricultural produce	179	82.5	38	17.5	Functional
6	Farm machines and equipment	41	18.9	176	81.1	Not Functional
7	Specimens of ornamental plants	171	78.8	46	21.2	Functional
8	PH meter litmus paper	194	89.4	23	10.6	Functional
9	Simple farm tools	204	94	13	6	Functional
10	Specimens of monocotyledonous and dicotyledonous seeds	167	77	50	23	Functional
11	Samples of animal feeds	162	74.7	55	25.3	Functional

12	Specimens of insect pests	171	78.8	46	21.2	Functional
13	Weeds specimen / weeds album	165	76	52	24	Functional
14	Charts and pictures	209	96.3	8	3.7	Functional
15	Fishing tools	110	50.7	107	49.3	Functional
16	Multi-media projector	54	24.9	163	75.1	Not Functional
17	Laboratory Apparatus	180	82.9	37	17.1	Functional
18	Specimens of endo-parasites and ecto-parasites	139	64.1	78	35.9	Functional
19	Forest products	156	71.9	61	28.1	Functional
20	Textbooks	215	99.1	2	0.9	Functional

Not Functional = 00 – 49%,
Functional = 50 – 100%

Table 5 showed the instructional resources functional for teaching Agricultural Science, the instructional resources functional for teaching Agricultural Science include chemicals, school farm, Agricultural Science laboratory, rock and soil and samples, specimens of agricultural produce, specimens of ornamental plants, pH meter litmus paper, simple farm tools, specimens of monocotyledonous and dicotyledonous seeds, samples of animal feeds, specimens of insect pests weeds specimen / weeds album, charts and pictures, Fishing tools laboratory apparatus, Specimens of endo-parasites and ecto-parasites, forest products, and textbooks.

Research Question 3: How do teachers utilize instructional resources for teaching?
The result is presented in Table 7.

Table 6: Rank Ordering of How Teachers Utilize Instructional Resources for Teaching

S/N	Items	Mean	Ranking
1	Students are allowed to visit the school farm for practical classes	3.58	2nd*
2	I use projected charts and pictures to teach agricultural science	2.95	8th*
3	Students use the agricultural science laboratory for practical classes and make use of apparatus	3.41	4th*
4	Farm tools are used during practical classes on the school farm	3.48	3rd*
5	I use soil samples to explain the types and properties of soil	3.30	6th*
6	I taught students how to operate farm machines and equipment in the school e.g. tractor, plough	1.90	10th
7	I use samples of feeds to explain the types of animal feeds and their compositions	3.04	7th*
8	I use fishing tools to teach at the school fish pond	2.80	9th*
9	I use textbooks to teach agricultural science	3.85	1st*
10	I use weed specimens / weeds album to teach types of weeds	3.32	5th*

Table 6 showed how teachers utilize instructional resources for teaching .Teachers use textbooks to teach agricultural science, visited the school farm for practical classes, used farm tools during practical classes on the school farm, used the agricultural science laboratory for practical classes and made use of apparatus, used weed specimens / weeds album to teach types of weeds, soil samples to explain the types and properties of soil, used samples of feeds to explain the types of animal feeds and their compositions, projected charts and pictures to teach agricultural science and fishing tools to teach at the school fish pond.

Research Question 4: What are the factors militating against the utilization of instructional resources for teaching Agricultural Science?

The result is presented in Table 8.

Table 7: Rank Ordering of the Factors Militating Against the Utilization of Instructional Resources for Teaching Agricultural Science

S/N	ITEMS	Mean	Ranking
1.	Teachers teaching agricultural science are not aware of the relevance of using instructional resources	2.12	8th
2.	The instructional resources for teaching agricultural in secondary schools are expensive	2.01	9th
3.	Inadequate fund for purchasing instructional resources	3.37	4th*
4.	Power shortage affects the use of some instructional resources for teaching agricultural science	3.47	2nd*
5.	Teachers do not like the use of instructional resources for teaching process	3.33	5th*
6.	Lack of suitable places to keep or store the instructional resources	3.41	3rd*
7.	Lack of time in using the instructional resources	3.12	6th*
8	No intent of the school to support the use of instructional resources	2.85	7th*
9.	Inadequate experience and skills in using instructional resources	3.88	1st*
10.	Some topics in agricultural science cannot be taught using instructional resources	1.42	10th

Table 7 showed the factors militating against the utilization of instructional resources for teaching Agricultural Science. The factors militating against the utilization of instructional resources for teaching Agricultural Science in the order of ranking are inadequate experience and skills in using instructional resources, power shortage, lack of suitable places to keep or store the instructional resources, inadequate fund for purchasing instructional resources, teachers do not like the use of instructional resources for teaching process, lack of time in using the instructional resources, and lack of intent of the school to support the use of instructional resources.

Hypotheses Testing

Two hypotheses were formulated and tested in the study using independent t-test at 0.05 level of significance.

H_{01}: There is no significant difference between male and female teachers' utilization of instructional resources for teaching Agricultural Science.

Table 8: Independent t-Test on Difference between Male and Female Teachers' Utilization of Instructional Resources for Teaching Agricultural Science

Gender	No	Mean	Std.	t-value	Df	p-value	Decision
Male	105	32.51	4.58	2.23	215	0.03	Not accepted
Female	112	30.82	6.36				

The t-value of 2.23 and the p-value of 0.03 in Table 8 are both less than 0.05 (0.03 0.05). The null hypothesis is rejected since 0.03 is less than 0.05 alpha threshold of significance. This suggests that there is a substantial difference in how male and female instructors use instructional materials for teaching Agricultural Science, with men teachers having a large advantage.

H_{02}: There is no significant difference between experienced and less experienced teachers' utilization of instructional resources for teaching Agricultural Science.

Table 9: Independent t-test on Difference between Experienced and Less Experienced Teachers' Utilization of Instructional Resources for Teaching Agricultural Science

Group	No	Mean	Std.	t-value	Df	p-value	Decision
Experienced	66	31.87	5.85	0.42	215	0.68	Accepted
Less Experienced	151	31.53	5.54				

Table 9 indicates that the t-value is 0.42 and the p-value is 0.68, both of which are larger than 0.05 (0.68 > 0.05). The null hypothesis is accepted since 0.68 is larger than 0.05 alpha threshold of significance. This means that when it comes to using instructional materials for teaching Agricultural Science, there is no substantial difference between experienced and less experienced teachers.

Summary of Findings

Based on the data collected, analyzed and interpreted, the following findings were obtained:

1. 90% of the listed instructional resources were available in the secondary schools.
2. 85% of the listed instructional resources were functional for teaching agricultural science in secondary schools.
3. Textbooks were the most utilized instructional resource for teaching agricultural science in secondary schools.
4. There was a substantial difference in how male and female instructors used instructional materials for teaching Agricultural Science, with men teachers having the upper hand.
5. There was no significant difference in the use of instructional materials for teaching Agricultural Science by experienced and less experienced instructors.

Discussions of Findings

This study assessed instructional resources for teaching Agricultural Science in Secondary Schools in Ogbomosho, Oyo State. The result showed that the available instructional resources for teaching Agricultural Science in secondary schools included chemicals, school farm, Agricultural Science laboratory, rock and soil and samples, specimens of agricultural produce, specimens of ornamental plants, pH meter litmus paper, simple farm tools, specimens of monocotyledonous and dicotyledonous seeds, samples of animal feeds, specimens of insect pests, weeds specimen / weeds album, charts and pictures (animal forms, pests, farm structures, soil profile), Fishing tools, laboratory apparatus, Specimens of endo-parasites and ecto-parasites, forest products, and textbooks. This implies that instructional resources for teaching Agricultural Science are available in Secondary Schools in Ogbomosho, Oyo State. This result supported the earlier finding of Kochar (2011) which reported fishing tools (like hook and line, fishing net, fishing trap), laboratory apparatus charts, maps, pictures, diagrams slides, films, filmstrips, and television among the instructional resources for teaching Agricultural science.

The result also showed that the functional instructional resources for teaching Agricultural Science include chemicals, school farm, Agricultural Science laboratory, rock and soil and samples, specimens of agricultural produce, specimens of ornamental plants, pH meter litmus paper, simple farm tools, specimens of monocotyledonous and dicotyledonous seeds, samples of animal feeds, specimens of insect pests, fishing tools, laboratory apparatus, Specimens of endo-parasites and ecto-parasites, forest products, and textbooks. This means that all the available instructional resources were accessible for teaching Agricultural Science. This result is in line with that of Nwabuike (2017) which revealed that the level of teachers' accessibility to instructional materials was high.

The result of this study also revealed that agricultural science teachers used textbooks to teach agricultural science, visited the school farm for practical classes, used farm tools during practical classes on the school farm, agricultural science laboratory for practical classes and made use of apparatus, used weed specimens / weeds album to teach types of weeds, used soil samples to explain the types and properties of soil, used samples of feeds to explain the types of animal feeds and their compositions, use projected charts and pictures to teach agricultural science, and used fishing tools to teach at the school fish pond. This means that instructional resources were used for promoting teaching and learning. This result disagreed with that of Sulaiman (2013) that teachers do not make maximum use of few instructional resources at their disposal because many of them do not have knowledge of operating them. The variation observed in the result of this study and that of Sulaiman (2013) might be due to difference in the subject and the kind of resources assessed.

The result of this study further showed that there was significant difference between male and female teachers' utilization of instructional resources for teaching agricultural Science in favour of male teachers. This means that gender influenced teachers' utilization of instructional resources for teaching Agricultural Science. This result refuted that of Nwala and Agbokoba (2017) who that there was no significant influence of gender on teachers' utilization of instructional materials. Differences observed in the result of this study and that of Nwala and Agbokoba (2017) might be due to difference in study location and the types of resources considered.

The findings of this study also revealed that there was no significant difference in the use of instructional materials for teaching Agricultural Science by experienced and less experienced instructors. This indicates that instructors' years of teaching experience had no impact on how they used instructional materials to teach agricultural science. This result contradicted Bello et al. (2017)'s prior conclusion that the amount to which instructors use instructional materials for teaching is determined by their level of teaching experience.

Conclusion

According to the findings of this study, available and accessible instructional materials for teaching agricultural science in secondary schools were available and successfully employed in teaching and learning processes, regardless of the instructors' experience.

Recommendations

The following suggestions are given in light of the findings of this study.

1. The government and school officials should work together to ensure that resources that were previously unavailable are made available to students as soon as possible.
2. Teachers should be encouraged to make appropriate use of available resources in order to teach and learn effectively.

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DESIGNING BLENDED-LEARNING WEBSITES FOR LEARNING AND ENJOYMENT: FROM STUDENTS' PERSPECTIVE

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ABSTRACT
Today's students demand greater control of their own learning and the inclusion of technologies in ways that meet their needs and preferences in their use of the Internet and the World Wide Web. These students are no longer passive consumers but active producers of knowledge. It is critical to understand the concepts of enjoyment and learning for enjoyment to allow the introduction of new era where the humans are having informal leaning while surfing the Internet. Also, it seems that the guidelines for the website design have to change as well to keep pace with the new learning concepts.
In this paper, a previous study is considered as a milestone, in which some characteristics where recommended to the systems/websites that provide enjoyable online learning along with some guidelines for these systems/websites. This study aims to generalize the findings that were put in a museum context to be applicable to any informal learning context like blended learning. To do so, a questionnaire was developed and distributed to students from new media department where they have the interest about this particular issue. The results were positive; therefore, another step took place, which consists of interviews to the same questionnaire's population to investigate the top and bottom features. The study concludes that the recommended characteristics & design guidelines that encourage enjoyable informal learning can be generalized to more than museum case study with some concentration over specific ones.
Keywords: Learning and Enjoyment; Website Design; E-learning; blended learning

Introduction

The "Internet" offers multiple advantages if we compared with other "mass media": it offers the access to: (1) a large amount of information, (2) it is flexible, (3) allowing the use of images and video, (4) and it allows linking to Web sites on a specific subject, makes everyone is connected with everyone. Thus it is part of the current and further expanding knowledge and new learning paradigms.

The most visible impact of blended and E learning is on distance education, which has been around for some time and had some limitations. The first and foremost change that E learning has brought in is that it has pulled down all the barriers of time and geography. Classic or traditional approaches to teaching and learning are normally depending on prepackaged learning materials with specific deadlines, and assessment tasks that defined by teachers (McLoughlin & Lee, 2008). The breed of these tools and technologies encourage us to consider how new modes like "community-based" sharing and content creation might be applied to the traditional or formal learning spaces of colleges and universities (Ralf & Marc, 2007).

According to the "Global Monitoring Report" in 2015, the e learning has started to make its way into developing countries and is believed to have huge chance for governments who struggling to meet a growing demand for education while facing an increasing shortage of teachers (UNESCO, 2015). Like no other training form, E-learning promises to provide a single experience that accommodates the three distinct learning styles of auditory learners, visual learners, and kinesthetic learners.

One of the advantages of e learning it offers a new type of self based instruction, which "print media" cannot provide. Modern learners are allowed to speed through instruction that is detailed. The new perspective of education not only impacted the way education was delivered but also it influenced the type of education that offers today. That it why e learning is including of ultimate number of participants with ultimate range of learning preferences, styles, and needs. On the other hand Blended Learning courses is a combination of "online and classroom" learning methodology and uses different resources in a new way to improve student learning outcomes (LOs) and to address important institutional issues (Garrison, 2004). Blended Learning refers to "an approach that combines E-learning with traditional in-person learning" (Hanna, 2019). There for, a blended learning program can consist of (a) monthly in-person training days, (b) weekly assignments, and (c) peer-to-peer discussions on a digital application or platform.

This research focuses into the concept of informal learning (blended learning) and its interaction with enjoyment and learning for enjoyment. The objective for this study is to generalize the findings of Lin *et al.* (2010) regarding the main characteristics of encourage enjoyable informal learning: novelty, harmonization, no time constraint, and

proper facilitation, and gives some of the recommended for a design guidelines of websites involved in informal learning with enjoyment.

The paper is arranged as follows; a background is presented in the next section to cover some of the basic concepts related to this research. This is followed with describing the main related work, which this work is based on; e.g., Lin *et al.* work in 2006, 2010, and 2012. Our methodology is described next, followed by the results and conclusion.

Background

Effective design of blended- learning materials and tools depends on "didactic design processes": that produce the absence of face-to-face instruction. This change in learning context and process is an essential factor that specifies blended learning from traditional instruction, and will require new considerations such as those outlined in this paper.

The transaction from traditional learning to blended-learning methods have been widely researched, some of theses researches suggesting that the E-learning programs can, but do not always, deliver improved learning outcomes (LOs) (Shakar, M., & Neumann, Y, 2003). The change in learning context affects the students and teachers relationship, which becomes different in many sides such as the interaction among student, online materials, the broader community of Internet users, and the duties of the teachers as facilitators and mentors. The next section discusses the relevance of understanding the concepts of: "enjoyment, learning for enjoyment, and website design" as a needed background to such field.

"Online learning":

Online learning describes education method that provide only through the Internet; it means that online learning doesn't consist of any physical learning activities or materials issued to students or actual face-to-face classroom. Online learning is " the use of E learning tools in a distance education mode using the Internet as the main medium for all student learning and materials". (Nichols M., 2003)

"Blended -based learning":

Blended or mixed mode describe an approach to education that combines "face to face" and "distance learning" to education mood in that case this will allow the instructor or tutor to meet with his students in both ways: (1) face to face mode. (2) Through a technological means using the Internet. According to the resource-base of content materials and learning activities is made available to students. According to researchers, the Internet and new technology takes an important role in blended learning; compared with the E learning courses which take place online and online only (Ravenscroft 2001). It means using the technology is the core part of E learning programs, but in blended learning the technology and the Internet is one of the mediums that help facilitate the teaching and learning experience.

Friesen (2016) defined blended learning, as "almost any integrations of technologies, pedagogies and even job tasks'. Procter in 2003 defined blended learning as "the effective integrates of different modes for course delivery, models of teaching and styles of learning". According to the study of Chew, Jones and Turner in 2008, "blended learning involves the integrations of two fields of concern: (1) education (2) educational technology". According to the study of Graham (2006), any Blended learning course methodology will combine face-to-face education mood with computer-based mood.

According to the study of Staker and Horn (2012), blended learning is "a traditional education program in which a student learns at least in part through online delivery of content and instruction with some element of student control over time, place, path, and/or pace".

These definitions helps to identify the main characteristics of blended learning according to: (1) The environment, (2) Instructional component and (3) Media component.

Blended learning characteristics	
The environment	A learning environment can either be (synchronous) or (asynchronous) Synchronous mood will take place in real time. It means in this methodology the communication between the students and the lecturer requires them to both be present at a given time. Activities examples: chat conversations and audio/video conferencing. Asynchronous mood are time-independent. The best example of this learning mood is the E learning course because it takes place at any time. Activities examples: E-mail or discussion boards.

Instructional component	This Instructional component is monitoring the use of the most appropriate instructional strategies that support the learning objectives. (Graham, C. R., 2006). Activities examples: Online and offline learning, Instructor involvement, Independent learning, and Peer interaction
Media component	Live classroom (face-to-face) Blended learning allow in class activities, which will support and create more engagement for the learners. Virtual classroom Learning process can take place over the internet, the learners will interact with the teachers throw the discussion board or emails. (Woodall, 2010). Self-paced learning Self-paced Learning sessions (Asynchronous): Materials for self- Paced sessions supported by well- designed study materials such as: pre- recorded classes, animated curriculum, web- based resources, videos, online discussion, online collaboration using wikis, forums or discussion boards, online quizzes, and online learning communities.

Table (1): Fundamental and characteristics of blended learning (Nichols M., 2003)

"Learning and Management System":
LMS is a combination of E Learning tools available through a shared managerial interface. A "learning management system" can be a type of a platform in which online or offline courses and courses components or materials including the assessments tools are assembled and used from. (Nichols M., 2003)

"Interactive learning":
According to Nichols M., 2003, there are two types of interactivity in education, indicative and simulative. (1) Indicative is designate by the use of interaction tools such as button and site navigation. (2) Simulative is interactivity that enables learners to choose their own materials in a way that provides some form of feedback.
Interactivity, is important in blended or online learning systems, it creates opportunities for the learners input so that the learner gets more involved with the lesson content instead of only being a passive observer.

E-Learning and blended learning theory
A theory can be described as: "a set of hypotheses that apply to all cases of a particular event, assisting in decision-making, philosophy of practice and effective implementation through practice" (Nichols, M., 2003). According to the previous definition of E learning it depending on using electronic applications in processes to learn.

E-learning processes and applications include the following: "Web-based learning", "computer-based learning", "virtual classrooms" and "digital collaboration". Content in e learning mood and blended mood is delivered via the Internet, "intranet/extranet", "audio or video tape", "satellite TV", and "CD-ROM". Elliott Masie, one of the renowned experts in e learning, proposed his theory based on that "E- learning is the use of network technology to design, select, deliver, administer, and extend learning" (Chadha G. & Kumail N., 2002).

Blended learning is a recent education concept depending on the use of the Internet technology, the content in Blended learning is delivered in digital mood using learning management system, provides a learner-orient approach for the teachers and students. The blended course methodology promotes the construction of "life-long learning opinions and learning society". This concept means: first, the delivery of digital content is the main character of learning approach. Second, blended learning extends the environment on the Internet; this environment is focused on learner-oriented, so we can change the thoughts of traditional teacher-center's instruction in classroom. Third, as a modern concept of education, it gives us a condition to realize the life-long learning process and help us to build more real learning and assessments society.

More practical view of knowledge has emerged where fact memorizing has become history, so we can't ignore the capabilities of the web in terms of providing anytime anywhere learning and the learners will choose their own course and their own timing to learn. According to the "70/20/10 model of learning and development" (Lombardo, et al, 1996). 10% of learning happens in a traditional classroom environment. The remaining 20% and 70% comes from interaction with peers and creative assignments.

By examining blended learning methodology, the researcher show that 70% of long-term professional development occurs, because the learners is participants to a lot of different activities that encourages them to apply the things they've learned into their work on a daily basis. The delivery mood combined with peer-to-peer collaboration and discussions on a digital facilitation application and platform. Theoretically part only account for 20% learning, it's the 20% that can make or break a learning experience.

"Enjoyment":
Psychologists and Philosophers have created researches and concepts relating to enjoyment, but definitions of "enjoyment" vary: first, in philosophy side as Perry (1967) suggested that "enjoyment' is a non-evaluative, non-cognitive and pro-attitude toward some actual object. These objects are a present doing, undergoing, or experiencing on the part of the subject. He also explained "to be enjoying a thing or to be deriving enjoyment from it is to have such a pro-attitude toward it". (p. 214).

The concept of fun and "enjoyment" has been identified as important in the learning for older students. According to the study of Lightfoot and Brady In 2005, they explained that older "people talked about the new and exciting ideas they were learning and the joy it provided" when describing their learning experiences (p 230).

Warner (1980), in his study of enjoyment, defines "enjoyment" in terms of three necessary sub-constructs: Engagement, Positive Affect, and Fulfillment. For learners to enjoy an activity, they have to: (1) participate totally in the activity; (2) be positively affected in terms of excitement, satisfaction, contentment, and (3) achieve implementing of needs or desires through the activity (Warner, 1980). In the following Figure (figure 1) illustrates how the concepts of learning and enjoyment can be related in learning methodology.

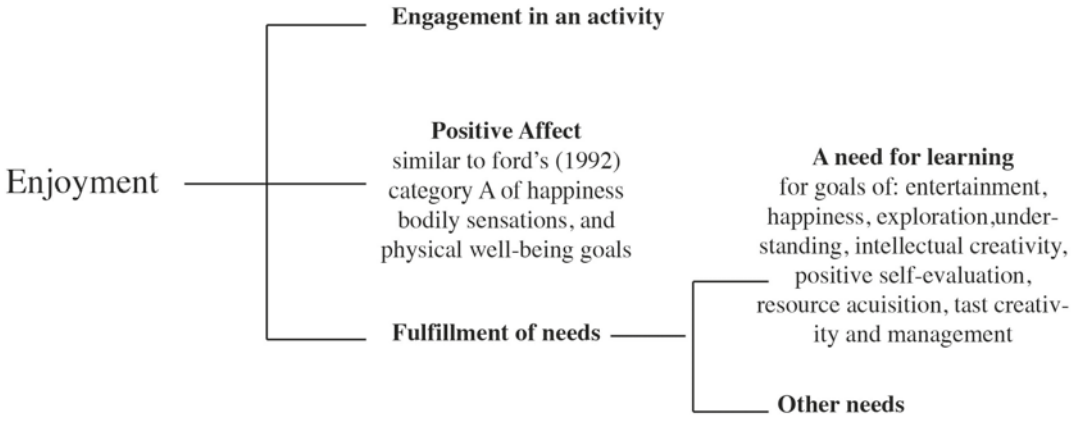

Figure 1: concepts of learning and enjoyment in education (Warner, 1980)

The student's in learning enjoyment acts as a milestone to encourage their learning action. The availability of a scale and researches that measures the enjoyment offered by e learning and blended course management systems encourage the web designer to understanding the strength and flaw of the interactive learning efficiently from the learner's points of view.

Related Work
First study: In 2005, a study of Andrew R. and Bradley highlighted the essential elements of effective design that assist in the development of teaching materials in effective way. This study introduced six elements of design process, these elements focus on paying attention to the learning activity, which includes: activity within an interesting story line, providing reliable opportunities for student reflection and third party criticism, considering new technologies for delivery, ensuring that the design is convenient for the context of the course, and bearing in mind the personal, social, and environmental impact of the designed activities. This study describes how these design elements can be effectively applied with examples from e-learning action. The six areas as mentioned in this study includes: (1) activity, (2) scenario, (3) feedback, (4) delivery, (5) context, (6) and impact (cover issues across all disciplines involved in e learning design process). They assume that in many business situations, the e-learning goal is to improve actual business outcomes, which achieved indirectly by the effectiveness of the e-learning course or education.

Second study: the study of Lin and Gregor In 2006, examined the design of websites that encourage both "learning" and "enjoyment". The study examined museum websites that offer educational materials. This study helps to reduce the gap in the literature, specifically "learning for enjoyment," by introducing a number of semi-structured in-depth interviews with museum and educational experts in Taiwan. The conclusion of this study identifies the nature of E-Learning for enjoyment.

The results show the following terms like "ease-of-use, appearance", "user-centered design", and "employment of well-resourced qualified staff", are important and harmonious with general principles of students-centered design. The findings also stand with Pace's (2004) study which found that features such as ease of understanding and aesthetic appeal contributed to users' which called "flow experience". The study of Lin and Gregor discussed new features include: interactivity, lower complexity and the consideration of self-directed learning (self study). The importance of this study lies in its identification of these specific features that the experts see as central to their mission of providing enjoyable online learning in different contexts.

Third study: According to the Blended Learning Handbook of Bonk and Graham (2006), blended learning should include a shift from "teacher-centered approach" to "student-centered instruction" in which students become active and interactive learners. This increases in interaction between student teacher (face to face class room), student-student (peer to peer), student content (self study), and student-outside resources activities (flipped class room). For the assessments tools is the integrated formative and summative assessment mechanisms for students and teachers.

"Blended learning" tools: divided into: (1) Asynchronous tools, such as forums and wikis, both activity example for courses that require reflection and more time to accomplish. (2) Synchronous discussions are especially important for learners who are too shy or lack language fluency to engage effectively in real time conversations.

Forth study: Another paper presented the techniques that have used to reduce the gap between all stakeholders in the development of eLearning material. The conclusion considered that the well-known "ADDIE" model is modified to suit with the current requirements and to overcome the identified challenges. The "ADDIE" model is an excellent way to build any online or blended course. "ADDIE: is an acronym that stands for the five phases: Analyze, Design, Develop, Implement, and Evaluate. The best way to learn how to create an online and blended course is to follow the ADDIE model (Michael C., 2018).

Fifth study: Lin et al conducted another related study in 2010. His study was an empirical study from the "end users' perspective" describing the design of websites that support enjoyable web experiences and informal online or blended learning. The study was designed to repair the gap in the recent researches by analysis on abundance of end users' opinions and perspectives. The study presented a set of characteristics for emboldening online and blended learning experiences, and proposed a number of conceptual guidelines for developing an online or blended learning website for enjoyment based on the end user's view.

Lin et al study (2010) tested three relevant web sections related to a "modern museum context" offering diverse design features to stimulate the participants into different modes of thinking. These sections participate as a part of the award-winning site "Age of the Great Khan". In this case, each section was different according to the following: First was the "Balance" section which contained interactive multimedia presented how to develop a balanced painting in six steps. Second the "Portraiture" section presented interactive multimedia illustrating of new painting techniques, displayed in 27 steps with animated graphs. The third section was a "reading-based section". The results of the final Data were collected by an online questionnaire from voluntary participants.

According to the final results of the survey: (1) The participants agreed on formal website design features, including "attractive appearance", "ease of use and navigation", "opportunities to interact", "accessibility to people anywhere at any time", "short and simple learning tasks", "free access", and "provision of feedback" are all important. (2) The "open-ended responses" that were analyzed focus directly on the characteristics of any systems that supply for enjoyable online and blended learning, followed by the design guidelines for these websites.

Sixth study: by, Lin et al. in 2012, has conducted second study to understand web enjoyment experience and informal learning. In this study also reported on an empirical research that analyzed the learning and enjoyment experiences of a large number of volunteer learners in a also museum context. This study explored in depth how designing for an enjoyment experience has special characteristics that differentiate it from traditional websites design, and suggests a number of "conceptual guidelines" for developing an online learning website for enjoyment.

Methodology

This study is developed based on Lin *at el* (2010) final results in their study, which concluded some characteristics, and design guidelines that encourage enjoyable informal learning in museum context. This research aims to assess the findings of the previous mentioned study by conducting descriptive research from two steps. The first step is developing a questionnaire to reveal the attitudes towards the suggested dimensions in the previous mentioned study in a general context.

In the research process a questionnaire was developed examining a number of 30 several questions: with "single and multiple choice", in an open form (essay). The "questionnaire" consists of two main parts; the first part presents the demographic variables of the sample (age and gender); the second part contains the 15 items align with five dimensions Likert scale examining the following dimensions: "(1) Novelty, (2) Harmonization, (3)No time constraint, (4) Proper facilitations and associations, (5) Designing multisensory learning experiences, (6) Create a storyline, Mood building, (7) Fun in learning, (8) Establishing social interaction, (9) Appearance, (10) Interactivity, (11) Ease of Use, (12) Accessibility, (13) Simplicity, (14) Partnerships".

The population of this research is all the new media students in both the Arabic and English departments, in MTI university in Egypt. The second step of the descriptive research in this research is conducting interviews with the same population of the previous questionnaire. The interview is related to ranking and commenting on the characteristics and design guidelines that encourage enjoyable informal learning for the population. The purpose of this step is to assess the current characteristics and design guidelines for different contexts. The survey was on open access application and was transferred to our respondents through the college learning management system "Moodle" and via e-mail. The survey was offered to students and teachers who had learning experience in "LMS" over the past two years. In total there were received 60 completed answers.

Results

Figure 2 illustrates the findings from the questionnaire analysis. The result is distributed into two columns according to the attitude of the sample; agree (in red and green) which indicates positive attitude towards the characteristics & design guidelines; and disagree (in orange and blue) which reflect the negative attitude. It is clear that ten out of 15 characteristics & design guidelines show full agreement. The remaining five items show that the majority of the population agrees with the suggested guidelines, but there is a small portion that shows disagreement especially in the "No time constraint" and "Novelty" items.

Table (2): The results of the questionnaire

Criteria	Strongly agree	Agree	Nature	Strongly disagree	Disagree
Novelty	40	25	15	15	5
Harmonization	32	25	30	5	13
No time constraint	43	22	20	3	12
Proper facilitations and associations	25	15	40	12	13
Designing multisensory learning experiences	55	10	10	15	10
Create a storyline	45	25	10	5	15
Mood building	65	10	3	9	13
Fun in learning	70	12	13	2	3
Establishing social interaction	45	25	18	12	0
Appearance	66	24	3	2	5
Interactivity	73	12	2	5	3
Ease of Use	64	16	12	3	5
Accessibility	70	12	13	0	5
Simplicity	75	5	5	10	5
Partnerships	54	12	13	16	5

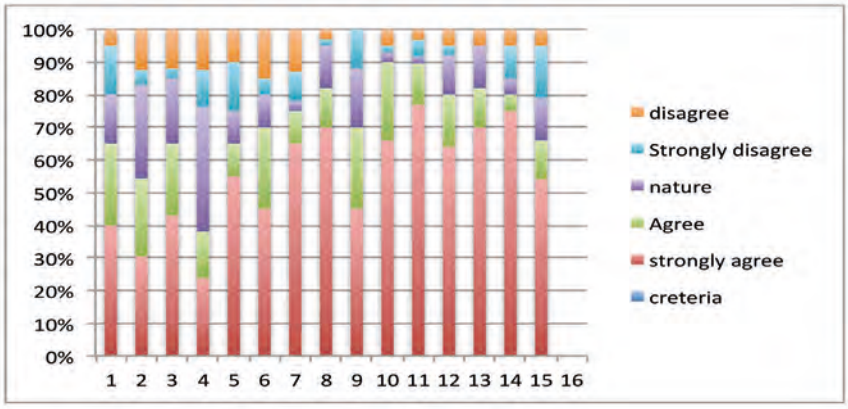

Figure 2: The results of the questionnaire; are the suggested characteristics and guidelines important or not?

The next result is the results of the interviews done with the same population as in the questionnaire. The opinions of the participants vary for some characteristics and design guidelines such as "designing multisensory learning experiences" which was considered by some of the students as a top three features, while other students consider it as an unimportant feature to be in a website for informal learning. However, the students agree on other characteristics to be crucial during informal learning process: having proper facilitations and associations and harmonization in a website were considered the top two features that encourage and ease the process of informal learning. Surprisingly, the third important feature is the ability of a website to create a storyline. It seems that this feature has huge impact on students and their accomplishment.

From the other side, the students agree on the feature that affect them the least; they seem not convinced that there is a real implication for mood building feature. Another unexpected response is that students did not give high attention to the feature of novelty; they are not looking for novel characteristic as much as they need other important issue affecting their learning process.

Regarding the guidelines suggested previously in the study, students agree that the ease of use is the most important guideline for the websites designers and organizations. Another surprising result was that students did not consider establishing social interaction to be a crucial guideline, neither the partnership! Both guidelines were considered as unimportant guidelines from the students' perspective.

Conclusion

According to the previous results, this study concludes that the recommended characteristics & design guidelines that encourage enjoyable informal learning can be generalized to more than museum case study. Some features showed to have higher impaction from students' point of view; such as having proper facilitations and associations, harmonization, and creating a storyline. Also, websites should consider the ease of use as a crucial design guideline. The 15 dimensions that were studied in this research can institute a framework to assess different kinds of websites for enjoyable informal learning. This conclusion was built on the opinion of skillful, knowledgeable, and practical students who have experience in designing websites from one side, and who are using websites as a tool of informal leaning during their study and their future work from another side.

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DIGITISED EDUCATIONAL EFFORTS (DEE): EFFECTIVENESS AND USERS PERCEPTION

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ABSTRACT
Digitized educational efforts are growing steadily worldwide because of the continuous development of educational technologies. Global adoption of e-environment and exasperating demand for workforce indicates the need for trained specialists for the ever-evolving virtual economy. The present study was conducted to understand the perception and effectiveness of Digitized Educational Efforts (DEE) by the female students of Banaras Hindu University. The sample comprised 544 female students belonging to eight faculties of Banaras Hindu University. The data were subjected to appropriate statistical analysis for arriving at logical conclusions. Besides, the study concluded that the majority of the respondent's perceived Digitized Educational Efforts as easily accessible and affordable than that of the traditional education system. Further, the majority of 487(89.52%) are satisfied with teaching and learning by digital mode. It was found that 109 (20.03%) agreed that there was more than 50% increase in marks and the majority of respondents found Digitized Educational Efforts found effective.
Keywords: Accessibility, Affordability, Digitized Educational Efforts, Perception, Effectiveness.

Introduction:

Background:

In the 21st century there is a growing demand for Information and Communication Technologies (ICTs). It is emerging as one of the prime source of knowledge for today's youth. Digital platform has readily provided numerous sources for education and developing knowledge. Many researchers and learners have found slew of content through technology to enhance this knowledge. The only drawback of digital platform is that most of the information is encrypted through passwords and hence not available for future purpose. In terms of the history of Digitized Educational Efforts, learning objects popularised the idea that digital materials can be designed and produced so that they can be easily reused in a variety of pedagogical situations. Wiley (1998) invented the expression "open content" which caught the attention of Internet users and popularized the idea that the principles of the open-source software movement could be productively applied to content. Wiley also created the first widely adopted open license for content.

India, after independence, has made a great progress in its education structure. These advancements led to initiate more & more educational institutions, colleges, and universities by various state governments. The rapid growth of higher education in the country was required to ensure quality education & success. To provide quality education to all, distance education emerged as an innovative alternative. The first ever distance learning in India for higher education was initiated in the form of Correspondence Courses in 1962 after that the Delhi University established a School of Correspondence Courses and Continuing Education in 1962. The establishment of IGNOU at New Delhi in 1985 has proved to be a significant milestone in the development of Distance Learning in India. It provides a central Organisation for guiding and coordinating the activities of all distance education institutes and state open universities in the country.

Context:

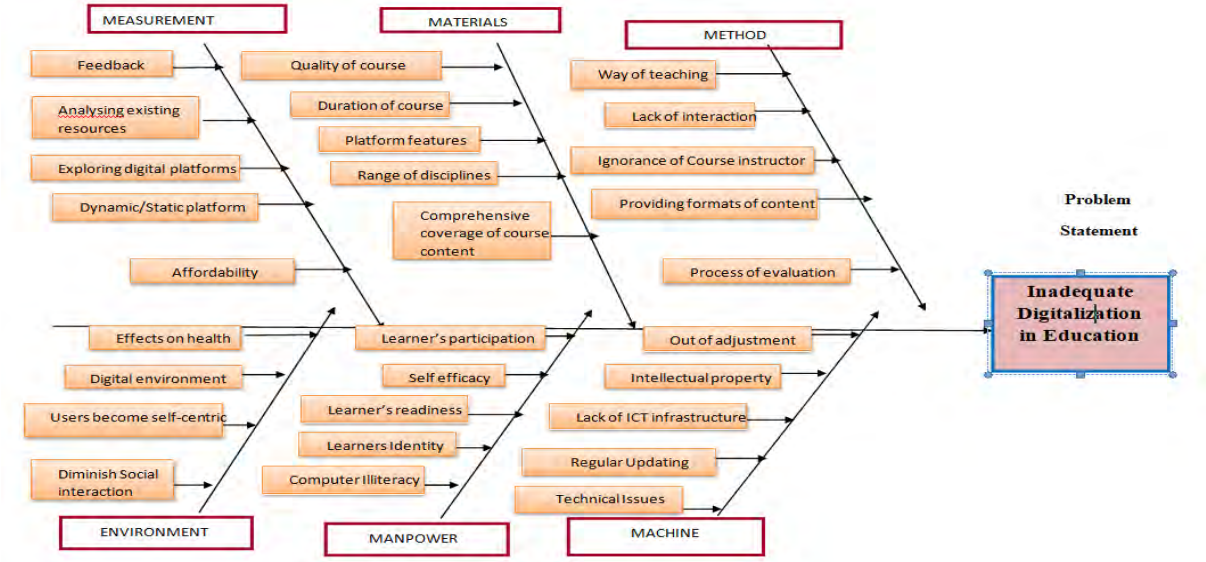
Digitized Educational Efforts refered to as the resources which are available in digital format. They can be read and scanned using electronic Medias. These digitised resources can be stored in a computer locally or remotely and do not require lagre space as books. Digitally formated resources includes PDFs, graphics images, or photos, audio and video.

The Research problem:

The proposed study is focusing on the effects of Digitized Educational Efforts on students of Banaras Hindu University, how the students perceive the efforts of various institutions was an issue. The implications of the

digitized educational efforts on students' performance was also a question of inquiry. Keeping the issue in view an effort has been made to present the views through cause and effect diagram.

Fig.1. Fishbone diagram depicting factors leading to inadequate digitalization in education



Conceptual framework:

It is opportune time for educators to work on digital modes of delivery of education and to adopt educational innovations. The purpose of educational innovations must not only lead to an improvement in grades or cutting costs but offer learners a more fulfilling educational experience. Traditionally, digitized opportunities in education perceived as a shortfall of face to face communication. It is mainly due to the lack of social presence, social interaction, and instant feedback. Consequently, online learning sources are at an early stage of development, developers and deliverers of digitized educational efforts need an deep understanding of student's perception about the sources to develop the appropriate technologies. Indeed, the student's perceptions and attitudes are critical for the involvement of learners in education. Documenting the quantum of knowledge gained with e-mediation, the extent of usage of technology, usefulness, and its benefits and challenges. A majority of respondents (80.2%) are going to accept the online mode of education followed by conventional education (19.8%), 73.0% respondents opined that online mode of education is moderately advantageous over conventional mode followed by low degree (13.5%) and high degree (13.5%) of relative advantage so a total of 86.5% respondents had medium to a high level of opinion towards the relative advantage of online education. (Jirli et al. 2006).

An effort has been made to present the views through the Logical Framework Approach as follows.

Fig.2. Logical Framework Approach

	Intervention Logic	Objectively measurable and verifiable indicators	Sources of verification	Important Assumptions
objectives/Goals	To measure perception and effectiveness of Open Educational Resources on students academic performance	Socio-economic profile of respondent, Access and usage pattern of respondents, Attitude towards Open Educational Resources and effect on academic performance	Primary data, Review of related literature, Reports from secondary data (Books, websites)	Open Educational Resources help students to improve academic performance
Purpose	Documenting and verifying how Open Educational Resources helping students	Percentage of respondents utilizing Open Educational Resources, analyzing effect of Open Educational Resources as Positive/negative	Interaction with respondents,	Respondents who have higher socio-economic status and who can afford ICT infrastructure use Open Educational Resources
Results/Output	Appropriate reception of information, increased interest in subject taught, reduce dependency and self reliance, improvement in grades, develop, appropriate perspectives about the issues	Change in existing practice, Change in skills, Development of scientific temperament	Utilization of experienced gain, improvement in output, change in attitude, change in skills	Open Educational Resources leads to better performance
Activities	Collection of data by Distributing interview schedules	Proper distribution and collection of interview questionnaires, Nature of response given by respondent	Sincerity of respondents, Level of understanding of questions by respondents	Respondents are sincere in filling the questionnaires
Inputs/Resources	Measures of central tendency, Measures of dispersion, Chi-square test Kendall's tau b, Garret ranking	Proper selection of variables and statistical tools	Outcomes of questionnaires	Adequate sample size

Review of Literature:

Biranvand & Khasseh, (2014) investigated that since the early 1990s modern information sources such as electronic books, virtual libraries, and e-library, have caused rapid progress in educational media. Digital opportunities like e-books indicate the development of education structure which provides the possibility to learn for everyone, anywhere, and anytime.

Gibson & Gibb, (2011) concluded that students get more attracted towards digitalized educational resources; this may be because readers of electronic books can find a certain topic in an electronic book much easier and effective than in a printed one.

Jayesh M. Patel, (2017) stated that many web-based tools can be used for digital education in the classroom, such as Twitter, Glogster, Prezi, Diigo, Dropbox, and Moodle. Teachers and students are interested in web-based digital learning, but due to lack of knowledge, they did not initiate the same activities. Web-based tools will make learning fun and students will gain motivation that normal classrooms cannot. Today's teacher-centred approach makes learning boring. Even for interesting chapters, the use of digital technology makes boring content interesting and fun. The concept of a child-cantered approach can only be realized with the help of digital technology

Jewitt, (2006) observed that the development of digital technology and the entry of resources into multiple modes of expression have created new opportunities for learning, but they have also further complicated these connections and require a broader re-understanding of literacy.

Jones (2002) researched "The Internet Goes to College: How Students Are Living in the Future with Today's Technology" at Washington.D.C results of the study examined that the impact of internet on college students' daily lives and their academic and social routines. He collected information from students from 27 colleges and universities and found that about 79 per cent of college internet users said that the internet had a positive impact on their college academic experience and 73 per cent of the students used the internet more than the library to search for information.

Kumar and Kumar (2010) conducted a study on "Perception and usage of e-resources and the internet by Indian academics" in Bangalore, they compared e-resources with print sources and observed that almost 50 per cent of respondents found information locating and identifying is easier while the same percentage believed that accessing information in electronic format is slightly easier. In case of engineering students about 57 per cent believed that information locating and identifying on internet is easier while 48 per cent of medical science and management studies students considered that information locating and identifying on internet is slightly easier.

Landouni and Diaz (2003) believed that electronic textbooks are educational tools prepared electronically, to aid teaching and learning. E-learning provides easier and broader access to information for education because it promotes coordination and collaboration between experts and students, and also shows a higher success rate compared to traditional methods.

A study by **Thanuskodi (2012)** showed that 76.66 per cent of respondents use electronic resources to write articles. Regarding the impact of electronic resources on the academic performance of students, the majority (48.6%) agreed that electronic resources have a positive impact on the academic performance of students. The number of people who strongly agree and agree is 118 (81.9%). 24 (16.7%) undecided, only 2 (1.4%) do not agree that electronic resources have a positive effect on students' academic performance

The research mentioned above showed that the use of digital education efforts has a positive impact on the academic performance of respondents and helps to improve writing and communication skills. They believed that electronic resources are valuable educational resources that help improve academic achievement. The survey also showed that respondents had a positive attitude towards electronic resources and agrees that electronic resources provide high-quality information. Most respondents find information easier to locate and identify with the help of the Internet.

Research questions:

1. How do students perceive Digitized Educational Efforts?
2. Is there any effect of Digitized Educational Efforts on student's academic performance?
3. Is there any relationship between the uses of Digitized Educational Efforts and gain in marks?

Objectives:
The objective of the study was to understand and measure the female student's perception towards Digitized Educational Efforts and to measure its effectiveness based on the improved academic performance.

Research Methodology:

Population and sample:
The study was conducted on female students of BHU(Banaras Hindu University) towards Digitized Educational Efforts perusing graduation, Post-Graduation, and Ph.D. as they are involved in the utilization of digitized educational efforts. The method of the whole enumeration was used for selecting the sample of the study. The sample comprised 544 female students from eight faculties of BHU. The emphasis was given to get the response of PG and Ph.D. girl students residing in hostels inside the campus. In many faculties, there were very few girls who stayed in the hostel, under such circumstances UG girls were respondents. The response received is presented in table 1. With the whole enumeration method, 544 respondents were selected, of which 100 respondents from the faculty of Agriculture and Arts, 78 respondents from faculty of Medicine, 52 from the IIT(BHU) and 50 from the faculty of Law, whereas,34, 80 and 50 respondents were from the faculty of Management, Science and Commerce respectively.

Table No.1 Selection of respondents

Sl. No.	Name of the faculty	Number of students						Total number of students	
		Graduate		Postgraduate		Research scholars			
		A	B	A	B	A	B	A	B
1	Agriculture	-	-	80	80	20	20	100	100
2	Arts	37	37	42	42	21	21	100	100
3	Medical	30	40	39	40	9	20	78	100
4	IIT(BHU)	-	-	31	60	21	40	52	100
5	Law	36	36	14	14	-	-	50	50
6	Management	-	-	32	40	2	10	34	50
7	Science	-	-	30	40	50	60	80	100
8	Commerce	41	41	6	6	3	3	50	50
Total								544	650

* Filled in Questionnaire received = A, Questionnaires distributed = B

The procedure of data collection and analysis:
To collect information regarding Digitized Educational Efforts, we surveyed by distributing questionnaires among the respondents. Purposive sampling method has been employed. The questionnaire was distributed personally to ensure the excellent response rate and to avoid any misunderstanding while responding. A total of 650 questionnaires were distributed out of which 544 received back duly filled in. Collected data were subjected to statistical analysis by using frequency and percentage, Henry Garret Ranking. To measure the effectiveness of the Digitized Educational Efforts Chi-square test and Kendall's tau b test was carried out between the use of Digitized Educational Efforts and its effect on the academic performance of respondents.

Result and discussion:
Research Question #1: How do students perceive Digitized Educational Efforts?
Survey Result
The perception of students towards Digitized Educational Efforts was measured by distributing questionnaires among them. The survey includes questions regarding access to the internet, affordability of Digitized technologies, perception regarding saving of money due to the use of Digitized Educational Efforts, and how they perceive open educational resources if users need to pay fees to access educational content.

Easy accessibility of internet

Access to personal computers and laptops is a common feature. Access to the internet is almost universal nowadays, which has changed the lives of millions of people. Among internet users, students utilized the internet for different purposes other than entertainment, shopping, or business.

Table: 2 Distribution of respondents based on agreement on easy accessibility of the internet:

Institute of Agricultural Sciences (n=100)	Institute of Arts (n=100)	Institute of Medicine (n=78)	IIT(BHU) (n=52)	Institute of Law (n=50)	Institute of Management (n=34)	Institute of Science (n=80)	Institute of Commerce (n=50)	**Overall (N=544)**
Percentage								
99	76	78.20	92.30	100	100	90	84	**89.52**

Table 2 shows that all the respondents (100%) from the faculties, i.e. faculty of Law and Management agreed on easy accessibility of internet, followed by 99 percent from faculty of Agriculture, 92.30 percent from IIT, more than three-fourth (78.20%)from the faculty of Medicine and 76 percent of faculty of Arts were found ease in internet access. Among overall respondents, the majority (89.52%) settled on the agreement of easy accessibility of the internet.

Individual affordability of Digital services

Digital technologies, mobile, and computers have easy access to the majority and are cost-effective. Students use mobile to access educational resources anytime, anywhere, which involves cost. To what extent students can invest in such amenities? It is evident from Table-3 that 84 percent of the respondents of Medical sciences are spending more than Rs.250 per month for accessing the internet followed by more than 75 percent from faculty of Law and Science respectively. More than 58 percent possessed UPS/Inverter/Generator for backup of the computer.

Table 3: Distribution of respondents based on individual affordability of Digital services:

Individual affordability of digital services	Agriculture (n=100)	Arts (n=100)	Medical (n=78)	IIT (n=52)	Law (n=50)	Management (n=34)	Science (n=80)	Commerce (n=50)	**Overall (N=544)**
	percentage								
On mobile spending more than 250 per month for accessing Internet on mobile	68	59	84.61	69.23	76	67.64	75	56	69.48
Have UPS/Inverter/Generator/backup for computer	40	31	24.35	30.76	40	58.82	46.25	52	38.41
Cost of Respondent mobile									
Less than Rs. 5000	8	3	3.84	13.46	-	5.88	8.75	8	06.25
Rs.5001 – 10,000	34	60	48.71	34.61	46	26.47	47.5	44	44.48
More than 10,000	58	36	47.43	51.92	54	67.64	38.75	48	48.34
Cost of Respondent Computer/Laptop									
Less than Rs. 25000	8	-	15.38	9.61	18	11.76	17.5	18	11.21
Rs.25001 – 50,000	83	67	47.43	80.76	40	67.64	71.25	34	63.60
More than 50,000	9	2	12.82	1.92	30	14.70	13.75	18	11.39

Hardly six per cent of respondents possessed mobile of price less than Rs.5000, while more than 48per cent possessed mobile of more than 10,000, about 44 per cent possessed mobile of price less than Rs.10,000. The trend reveals that the majority of students possess high-end phones with many applications. It has many benefits also. Apart from entertainment, several educational inputs can be accessed through these devices.

In the case of Computer/Laptop, more than 11 per cent of respondents possessed gadgets worth less than Rs.25,000 and an equal number of them possessed gadgets worth of more than 50, 000. While about 63 per cent of respondents were possessing gadgets worth 25 to 50 thousand. Looking into the present-day market, in the range of 25 to 50 thousand rupees, we can get either desktop or laptop with the majority of advanced features.

Savings due to Digitized Educational Resources

It was found (Table 4) that 87.5 per cent respondents from faculty of Science agreed that they saved money by using Digitized Educational Resources, followed by 85.29 per cent of the respondents from faculty of Management and 84 percent from the faculty of Agriculture accepted that they saved money by using Digitized Educational Resource. Total, 41 (80%) of the 51 faculty stressed that reducing the cost of education for college students was their priority.

Table 4: Distribution of respondents based on their perception of financial saving due to Digitized Educational Resources:

Agreement of respondents on money saved by using open educational resources	Agriculture (n=100)	Arts (n=100)	Medical (n=78)	IIT (n=52)	Law (n=50)	Management (n=34)	Science (n=80)	Commerce (n=50)	**Overall (N=544)**
	percentage								
	84	63	61.53	78.84	76	85.29	87.5	74	75.36

Henry Garrett's Ranking Technique:

Henry Garrett's ranking technique was used to evaluate the rankings given by respondents as what they more or less likely to do as a result of using online educational resources. This technique helps to find the most preferred factor by the respondents. As per this method, respondents have been asked to assign the rank for all factors and converted into score value with the help of the formula:

Percent position =100 (Rij – 0.5)/Nj

Where,

Rij = Rank given for the ith variable by jth respondents.

Nj = Number of variables ranked by jth respondents.

Table 5: Garret ranking of perception of learners regarding adopting DER

Reasons for adopting DER	**Total**	**Average**	**Rank**
Study a free course/study a free open educational resource	34,378	63.19	1st
Enroll on a paid-for course	26,223	48.20	4th
Enroll in a paid-for course and work towards a qualification	28,972	53.25	3rd
Ready to pay only if the certificate is awarded	30,686	56.40	2nd

It is evident from Table 5 that learners want to go for a free course/study a free open educational resource received the first rank. Next in the order was learners were ready to offer the course or any services, only if they are offered certificates for the same. Third, in the order was the interest of learners was to enroll a paid course and work towards a qualification, acquiring qualifications through educational efforts is a welcome perception for policymakers. Existing efforts are for improving the quality of current educational efforts and quench the thirst of interested learners by providing quality learning materials and sources.

Research Question #2: Is there any effect of Open Educational Resources on student's academic performance?

The effectiveness of Digitized Educational Resources is measured by calculating the association between the use of Digitized Educational Resources and their effects on improved academic performance of students. Chi-square test and Kendall's tau b test was followed to measure the association.

Effect of Digitized Educational Resources on academic performance:

Table 6 depicted that the effect of increased participation in classroom discussions (85.29%), increased interest in the subject taught (100%), gaining confidence (100%), increased enthusiasm for future study (100%), becoming interested in a wide range of subjects than before (100%), is more likely to complete course of my study (100%) and helped to know various subjects without anybody's help (100%) was found to be more in the Faculty of Management as compared to the other faculties. However, the effect of increased satisfaction with learning experience (98%), increased experimentation with new ways of learning (95%), and assignment given during course study (95%) was maximum in the Faculty of Agriculture. On the other hand, the effect of improvement in grades (88%), feedback system strong enough to clarify and resolve various doubts and problems that arise during the course (82%) and having increased independence and self-reliance (100%) was found be highest in the Faculty of Law.

Table 6: Distribution of respondents based on the effect of Digitized Educational Resources on academic performance:

Effect of Digitized Educational Resources on respondents studies	Agriculture (n=100)	Arts (n=100)	Medical (n=78)	IIT (n=52)	Law (n=50)	Management (n=34)	Science (n=80)	Commerce (n=50)	**Overall (n=544)**
	percentage								
Increased participation in classroom discussions	81	68	84.61	82.69	72	85.29	78.75	70	85.84
Increased interest in the subjects taught	95	72	84.61	90.38	82	100	95	72	84.84
Increased satisfaction with the learning experience	98	77	82.05	84.61	76	88.23	96.25	90	86.94
Improvement in grades	82	70	75.64	84.61	88	73.52	83.75	74	78.67
Gaining confidence	96	71	79.48	88.46	94	100	88.75	76	85.47
Having increased independence and self-reliance	97	72	76.92	86.53	100	94.11	96.25	84	87.31
Increased experimentation with new ways of learning	95	71	83.33	75	94	88.23	93.75	82	85.11
Increased enthusiasm for future study	93	72	76.92	86.53	94	100	95	82	86.02
Becoming interested in a wider range of subjects than before	93	56	71.79	80.76	88	100	86.25	72	79.04
Being more likely to complete my course of study	88	59	65.38	82.69	76	100	88.75	74	77.38
The assignment is given during the course study were found useful	95	68	83.33	86.53	88	79.41	91.25	76	83.63
Feedback system strong enough to clarify and resolve various doubts and problems that arise during the course	81	46	74.35	65.38	82	58.82	81.25	44	67.64

Helped to know various subjects without anybody's help	90	65	74.35	80.76	94	100	92.5	76	82.35

It was found that out of 544 respondent's majority of respondents found Digitized Educational Resources effective. Among 544 respondents 468 (86.02%) increased enthusiasm for future study, 475 (87.31%) increased independence and self-reliance, 465 (85.47%) gained confidence, 463 (85.11%) Increased experimentation with new ways of learning, 455 (83.63%) assignment given during course study was found useful, 448 (82.35%) helped to know various subjects without anybody's help, 430 (79.04%) became interested in a wider range of subjects than before, 421 (77.38%) being more likely to complete my course of study, 421 (77.38%) increased participation in classroom discussions, 368 (67.64%) stated that feedback system is strong enough to clarify and resolve various doubts and problems that arise during the course respectively.

Chi-square test and Kendall's tau b test

The test was carried out between that use of digitized educational technologies and the effect of Digitized Educational Resources on academic performance.

1. It was found that the use of digitized educational technologies and the effect of digitized educational efforts on academic performance were associated as the p-value was ($p = 0.049$), hence null hypothesis is rejected and is accepted. Since the p-value is less than chosen significance level ($\alpha = 0.05$). The results of the study concludes that the use of digitized educational technologies and effect of digitized educational efforts on academic performance are associated (= 9.524, p =0.049).

2. A Kendall's tau b test was carried out to determine the relationship between the use of digitized educational technologies and the effect of digitized educational efforts on academic performance amongst 544 respondents from eight faculties. There was no correlation between the use of digitized educational technologies and the effect of digitized technologies on academic performance, which was statistically non-significant. (= 0.077, p =0.102).

Table 6: Chi-square and Kendal's tau b test

Sr.No.	**Particulars**	**Chi-Square value**	**Asymp.Sig**
1	**Use of digitized technologies and Effect of Digitised Educational Efforts on academic performance of students**	9.524	0.049
		Kendall's tau b value	Asymp.Sig
		0.077	0.102

Research Question #3: Is there any relationship between the use of Open Educational Resources and gain in marks?

Percent gain in marks due to Digitised Educational Efforts:

Table 8 depicted that majority 76.64% of respondents from the faculty of management found less than 25% gain in marks due to Digitized Educational Efforts, followed by 56.25% from the faculty of science found 25-30% gain in marks and 53.84% from faculty of medical found 50% gain in marks

Table 8: Distribution of respondents based on percent gain in marks due to Digitised Educational Efforts:

% gain in marks due to Digitised Educational Resources	Agriculture (n=100)	Arts (n=100)	Medical (n=78)	IIT (n=52)	Law (n=50)	Management (n=34)	Science (n=80)	Commerce (n=50)	**Overall (N=544)**
	percentage								
Less than 25%	41	57	14.10	50	42	76.64	23.75	48	46.50
25-30%	40	24	32.05	30.76	24	32.25	56.25	26	34.19

More than 50%	19	19	53.84	19.23	24	-	16	26	20.03

It was found that out of 544 respondents majority of respondents found Digitized Educational Efforts helped them in gaining percentage in marks, it was found that109 (20.03%) agreed that there was more than 50% increased in marks whereas 253 (46.50%) agreed that there was less than 25% followed by 186 (34.19%)up to 25-30% respectively.

Discussion:

Results from the analysis of data collected from students of Banaras Hindu University, Varanasi show that:

1. Students have easy accessibility of the internet as campus hostels provide free wifi facility to students so that students can easily access Digital content. Similar results were found by Jelena and Dijana (2011) study on gender differences in the internet usage among postgraduate students enrolled at the Faculty of Organization and Informatics Varazdin, University of Zagreb revealed that information dissemination is faster, accessible with faster accesses and better selection, more than a half of male students (60%) agree with the statement that Internet will one day replace the libraries. Though, female students do not share the same opinion. About 52% of female respondents feel that the Internet will never replace libraries.

2. On the other hand affordability of Digital services by students was one of the limitations to access and use Open Educational Resources. An interesting observation is more than 80 percent had either a laptop or desktop. Means gadgets are affordable and accessible. The prime requirement is the availability of educational content to satisfy the needs of learners. Learners are harnessing the available content and looking for better quality content. Apart from entertainment, learning is the objective of young aspirants. The institutions are working on catering to the needs of the learners.

3. The majority of respondents implied that they saved money as many of them are freely accessible in different formats, students might need to pay the cost of printing if they would like to acquire printed copies. In both cases, faculty indicated that a significant amount of reduction in the cost of textbooks is possible (Ozdemir, O., Hendricks, C. 2017). Furthermore, the cost savings of OER addresses broader goals of more equitable access to education (Biswas-Diener&Jhangiani, 2017). The basic issue is the availability of digitized content and its access to end-users. Next in the order is the learner's interest in accessing the additional contents in addition to classroom learning. More inclination towards digital content is also an indication of learners' quest for quality information. There are many sources of information that provide complete access on payment basis only. Very limited content is freely available, if you want to move towards the next step, pay and proceed. Under such circumstances sources like NPTEL, SWAYAM, e-PG Pathashala, Krishikosh, e-Granth, etc are providing access to quality educational contents free of cost to learners. Hence learners are feeling that they have saved money by accessing the educational contents from authentic sources that too free of cost. It was also observed that the majority of respondents (75.36%) said that they saved money by using Digitized Educational Efforts. The reason behind these findings may be the free provision of Wi-Fi facilities in the hostels. Also, the availability of all kinds of e-resources including the full textbook, research papers, etc. in various formats such as PDF, word files, helps the students to download them online instead of spending money and getting hard copies.

Higher participation in education systems around the world poses a challenge in allocating costs between public budgets and private households to cover the cost of high-quality learning materials. Compared with the traditional model of appropriate content, digital education work offers the potential to reduce costs by sharing and updating resources in a more cost-effective manner. Textbooks, which are widely used as the basis for learning at all levels of education around the world can be replaced by open digital format which can reduce costs and increase the relevance of new textbooks.

4. Henry Garret's ranking of perception of learners regarding adopting Digitized Educational Efforts implied that somewhere we feel happy to have things free of cost. Marketing agencies have exploited this concept like anything in developing and underdeveloped countries. The cost of these services is borne by somebody, maybe it is the government in most of the cases. If private players come out with such attractions, the cost will be surely be recovered in subsequent events But anything which is termed as 'free' attracts masses. Displaying certificates is another indicator of quality, hence learners are interested in certificates, also they are ready to pay for it. Thus, it can be concluded that students preferred free courses but they are ready to pay if certificate or degrees are offered. Similar findings were revealed by Jirli *et.al* (2019) that a group of 49 (5 percent) respondents were honest enough to reveal the reality of participation in the course activities to get a certificate. The varied responses give us an

insight that the content to be included in the course needs to be carefully selected to cater to the needs of a diverse range of clientele.

In the case of the current use of Digitized Educational Efforts in agriculture, it was found that the majority used agMOOCs platform as it offers MOOCs on various courses in agriculture that too free of cost. Also provides course materials in a variety of formats such as videos, audios, and PDFs. A study conducted by Jiri et.al on "Alternative learning platforms for agri-students through e-Mediation: An initiative of agMOOCs" revealed that More than 90 percent of learners expressed their satisfaction with the content while nine percent remained neutral and one percent expressed their dissatisfaction. Distribution of learners based on Satisfaction with the content provided on the agMOOCs platform about 89 percent of learners were satisfied with the pace of content delivery, a feature of offline mode was added to the agMOOCs app so that you can access contents of the course without an internet connection. The benefit for the learner is that he/she can access the cloud-based course contents when they are not having internet connection ease of using agMOOCs app was recorded, which revealed that more than 85 percent of respondents said it's easy to use.

5. The result of the study has shown positive effects on academic performance of students. Chi-square test has shown an association between the use of Digitized Educational Efforts and its effects on academic performance. On the other hand, Kendall's tau b test did not show any association between them. Similar results were reported by Mehandi and Kalpana (2018) they stated that that 84.5% (127) agreed that e-learning was beneficial as it would be an interactive session and courses are readily available online. 78.5% (118) students found it cost-effective but 28.5% (43) students expressed their fear over its cost-effectiveness. 63.5% (94) felt that web-enabled training would help in a better understanding of the course than formal teaching methods. 54.6% (82) felt that e-learning would help them to learn on your own at your own pace.Thus it is clear from the table that many of the variables of Digitized Educational Efforts have cent percent effect on some faculties such as management so it can be concluded that the Digitized Educational Efforts may be the reason of the academic success of students from different fields and it helps the students to become self-reliant as well, although, the e-resources cannot replace the conventional teaching methods, they can surely supplement productively.
6. On percent gain in marks due to Digitized Educational Efforts it can be concluded that increases in the percentage of marks were seen in the students of all faculties, although the percentage was not much higher. From this, we can say that there is scope for further improvement in marks of the students in the future with the utilization of digitized resources.

Recommendations:
The current research focuses on measuring perception and effectiveness of Open Educational Resources, the study recommends that,
1. There is a need of implementing properly designed Digitized Educational Efforts to cater to the emerging needs of the students from different faculties.
2. It was observed that the majority of the students were registered for the Online Courses because they can access it without paying any fees and were provided a certificate. Students access it only because it provides a certificate, not for educational gain, if we asked to pay some money for the course, students will access it seriously, because they are paying for it. The study recommends providing paid online courses because students who are want to gain some knowledge will apply for it.

Conclusion:
The study intended to measure the effect and perception of Digitized Educational Efforts on students' Academic Performance, results of the study revealed that majority of the students had easy access to the internet and they found that the digitised educational resources are cost-effective than the traditional education system. The cost of textbooks and the cost of tuition are rising hence many students simply cannot afford textbooks. On the other hand, Digitized Educational Efforts is a way to easy access to course materials and should further utilize in a blended learning environment to support face to face teaching and allow for flexibility in the delivery of education. On the other hand, Digitized Educational Efforts have a positive effect on student's academic performance as it helps students to gain marks, increased participation in classroom discussions, increased satisfaction with the learning experience, increased independence and self-reliance, etc. There is a need to properly designed the technologies so that it helps to enhance student involvement and learning while breaking down barriers of affordability and accessibility.

Implications
The results of the study helps in bringing necessary changes by incorporating the newer techniques and tools into the learning environments for the benefit of the learner as well as incorporating e-mediated strategies, tools, and technologies at the Institutional level.

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ETHICAL ISSUES IN USE OF ICT AT HIGHER EDUCATION

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ABSTRACT
Ethics or good thinking include arranging, shielding, and suggesting excellent and lousy lead ideas. The investigation's primary focal point was to see the ethical issues of using ICT in Higher Education. For this reason, scientists built a poll comprised of 20 items. A sample of 200 students (100 each from Research Scholars and M.A. final year students) was gathered from various Departments of Social Science Faculty of Aligarh Muslim University through a convenient sampling technique. A survey research technique was utilized for this examination. The investigators did the item-wise analysis and percentage analysis for interpretation results of obtained data. The specialists found that the understudies of advanced education have a decent comprehension of ethics and ethics issues of ICT. They have the possibility of ethics, counterfeiting, virtues. The examination additionally demonstrated that they have an absence of mindfulness in a viable life.
Key Words: Ethics, ICT, Higher Education, Plagiarism, Reference, E-Book, Assignment**.**

Introduction:

The achievement of universal participation in education is fundamentally dependent on education quality (EFA, 2005). In 1990, education became accessible to every child throughout the world. However, there always raises a question regarding the quality of education which needed to be improved. The statement on schooling likewise arranges quality as a model for accomplishing the crucial objective of value(Altunkaya, 2018). While the origination of value was not wholly evolved, it was perceived that extending access alone would be lacking for schooling to contribute entirely to the improvement of an individual and society. Accentuation was appropriately positioned on guaranteeing an expansion in kids' psychological improvement by improving the nature of their schooling. So, the various organization attempts to bring quality change in education by bringing innovations in education. The information communication technology (ICT) is a practical, innovative program towards quality education(Zhang & Nielsen, 2018). In this context, using ICT in teaching-learning is seen as more potentially useful in improving classroom instruction than the traditional model.

India's government supports federally sponsored schemes like Sarva Shiksha Abhiyan (SSA) and Rashtriya Madhyamik Sikhsha Abhiyan (RMSA) to provide school education to improve the quality of school education in the country. A substantially higher amount has been allocated to these schemes, aiming to foster ICT-based education in schools. Teachers are the medium, through whom these novel schemes are taken to the ground root level(Ursavaş et al., 2019). So, to achieve this, teachers need to be trained in implementing ICT based education.

A classroom can be enhanced with ICT support, only by how the teacher integrates ICT in the classroom. It is evident from the researcher that the teacher "capacity to integrate ICT in the classroom depends on teacher's competency in using ICT in the classroom" as teachers in-service re overloaded with a lot of responsibilities, training that happens during in-service is fruitful only when the external factors like the increments, awards, promotions, etc. are considered(Tondeur et al., 2017). However, in pre-service, it does not demand such factors; UNESCO (2005) recommended infusing into the curriculum to enhance the technological pedagogical and current content knowledge(UNESCO., 2010).

Rapid changes in technology and global capital have become part of life in this century. In this century, almost every aspect of people's lives is characterized by change. This change has its hand on the education system as well. As Charles Darwin says "It is not the strongest of the species that survive, nor the most intelligent, but the ones most responsive to change"(Tapani & Salonen, 2019). The education system must respond to change in a way that helps to shape the future. Consequently, the use of ICT in schools through the improved provision of infrastructure, availability of the equipment and connectivity cannot be seen as just an example of the change in school and University system(Sanseau & Ansart, 2014).

On focusing on the above paragraph, we can say that the excellent view or aspects of the ICT say that every aspect has equally good and bad sides. So here also the same issues and we just forgot about our ethics and ethics(Runions, 2014).

Ethics:

Ethics try to determine human profound quality inquiries by characterizing ideas, for example, tremendous and detestable, good and bad, excellence and terrible habit, equity, and wrongdoing. As a scholarly request field, ethics is identified with the right way of thinking, different ethics, and worth hypothesis(Mertala, 2019).

Information and Communication Technology

In our day by day life, each perspective installs innovation. We cannot envision existence without innovation. A specialized mechanical assembly like the P.C., cell phone, there are developing requests on nearly everybody, including educators, understudies, and money managers, to turn out to be innovatively proficient today(Lodders & Meijers, 2017). ICT represents Information and Communication Technology, and it alludes to advancements that give admittance to data through media transmission.

Data and Communication Technologies have furnished society with a vast swath of new correspondence capacities. For instance, individuals can impart continuously with others in various nations utilizing Technologies, for example, texting, voice-over I.P. (VoIP), voice over LTE (VoLTE), and video conferencing. Interpersonal interaction sites like "Facebook", "Instagram", permit clients from everywhere the world to stay in contact and impart consistently(Kim, 2018). Present-day Information and Communication Technologies have made a "worldwide town" where individuals can speak with others across the world as though they were living nearby. In a worldwide town, we need a "Worldwide Language" for correspondence, and in the current situation, English satisfies that job(Istenic Starčič et al., 2016).

ICT in Higher Education

If in the wake of expenditure much cash on projects and plans nations have not gotten entirely proficient, it is time that creative and financially savvy techniques be set up to address the issue of training in these nations(Hearne & Galvin, 2015). While this is a considerable issue need for change in the instructive arrangement of this nations at different level academic curricular just as institutional, the crisis of different Information and Communication Technology(ICTs) and their expanding acknowledgement and variation by society giving one of a kind chances and advance schooling for an enormous scope(Gough, 2017).

There is developing mindfulness constructing nearly policymaker worldwide and India on the arising job of ICT in improving the school training cycle and results. All around acknowledged reality that the successful employments of ICT in the study hall are co-identified with positive scholastic results, including higher grades, better mentality towards school, and a superior comprehension of the theoretical idea(Ferreira et al., 2018).

Significance of the study:

We are living in a continually advancing computerized world. ICT affects practically every part of our lives – from strolling to mingling and figuring out how to play. The computerized age has changed how youngsters convey, network, look for help, access data, and learn. As innovation turns out to be increasingly more installed in our way of life, we should give our students significant and contemporary encounters that permit them to effectively draw in with innovation and set them up for their life after training(den Boer & Hoeve, 2017).

Data and Communication Technology (ICT) has become a brief timeframe, the essential structure squares of current culture. Numerous nations currently respect understanding ICT and dominate the essential aptitude and idea of ICT as a feature of instruction, close by perusing and composing numeracy. UNESCO's abrogating point is to guarantee that all nations, both created and creating, approach the best instructive offices to plan youngsters to assume full jobs in current culture and add as far as anyone is concerned(Cardoso et al., 2012).

Consequently, it is evident from the above conversation that the more significant part of the investigations has been directed in the field of ICT about the job of ICT in instruction and demeanour of instructors and understudies towards it. However, no examination work has been done on the ethical issues concerning the utilization of ICT in advanced education was discovered(Baydas & Goktas, 2016). Hence, the point has been chosen.

Before selecting the problem, the investigator has gone through many research works related to the attitude towards ICT, teachers' role in ICT, and various topics. However, there was no specific work on ethical issues concerning the use of ICT. Furthermore, with the higher qualification, we just forgot the ethnicity(Zhang & Nielsen, 2018).

Objectives of the problem:

1. To know the purpose of using ICT in higher education.
2. To know the level of awareness of Ethical issues to the students.
3. To know the frequency of using ICT in higher education by keeping in view Ethical issues.
4. To know the percentage of people who give proper citation in their work.

Research Questions:

1. What are the purposes of using of use of ICT in higher education?

2. To what extent students are aware of the Ethical Issues concerning the use of ICT?
3. Percent of students given a proper citation in their work?
4. Percent of students using the ICT keeping in the view the ethical issue?

Methodology and Design of the study:

Methodology: Survey type research method was used**.**

Sample: A sample of 200 **(**100 Research scholars and 100 M**.**A**.** final year students**)** was collected from different Departments of Social Science Faculty of Aligarh Muslim University through convenient sampling technique**.**

Tool: Researchers developed a questionnaire that consisted of 20 items**.**

Statistical technique: Percentage analysis was used for data collection**.**

Tool Development

The investigators developed a self-made questionnaire of 20 items to assess the ethical issues of using ICT in higher education. The first step of constructing a scale was the preparation of the blueprint of the questionnaire. All the aspects of ethical issues of ICT were taken into consideration. At the present study, investigators constructed 40 statements with the help of previous studies and the Internet. Moreover, with the guidance of an expert, the questionnaire is finalized with 20 items. All these statements (except first two statements are open-ended) to be rated on a two/three points. Two points of responses are yes, no and three points are always seldom and never—the respondent must indicate the response by putting a more suitable tick mark.

The validity of the tool

Validity means that we measure what we want to measure. Validity refers to how well a test measures what it is purported to measure. The tool has content validity. All the tool items based on the ethical issues of Information and Communication Technology, so it has content validity. For checking content validity, the scale was carefully examined and given to an expert at the Department of Education she was asked to give her judgments about the content included to scale.

Scoring of data

After the collection of data, the next step is scoring the data. Here the investigators are code the items of the test, manually. Here, the study's primary purpose is to determine the percentage of students' awareness of the higher education level's ethical issues. Then the final percentage was prepared.

Analysis of data

The collected data is tabulated as per the study's need and is analyzed according to the objectives and hypotheses formed. In Social Science Research, the data analysis involves three significant steps, as:

1. Cleaning and organizing the data for analysis (data preparation)

2. Describing the data (descriptive statistics)

3. Testing hypothesis and models (inferential statistics)

Analysis and Interpretation of the Data

Analysis and Interpretation of data is an essential step in any research. It requires carefulness and precision. The analysis of data is done using appropriate statistical techniques in light of objective formed to carry out the present work. In this chapter, the researcher has presented the analyzed data according to the formulated hypotheses. Results have also been interpreted for better understanding and investigating the correctness and authenticity of complete statistical analysis. Data collected is meaning full until it is interpreted in some useful way.

In the present study, the statements have been analyzed as per responses received from various respondents. The wise statement analysis has been presented below:

Q.1. Write three points about the ethics of ICT

The researcher asked this question from 100 students of Ph.D. and 100 students of M.A. 3rd semester. Out of the 16 respondents from Ph.D. do not have any idea about the ethics of ICT. At the same time, 84 respondents of Ph.D. write some lines about the ethics of ICT at higher education. However, after evaluating the questionnaires, we can find out that 76 respondents are about the topic, and the rest are not related to the topic. On the other hand, in M.A. 3rd semester students, 66 respondents responded to this topic. However, we can find that only 54 respondents are near to the topic. Nevertheless, 34 respondents have no idea about the topic. So from here, we can say that more than half of the students know about the ethics of ICT.

Q.2. Write three points about plagiarism

The researcher asked this question from 100 students of Ph.D. and 100 students of M.A. 3rd semester. Out of the 11 respondents do not have any about the plagiarism. 84 students of Ph.D. write about the topic, but only 81 students gave the approximate idea about plagiarism. In the case of M.A. 3rd semester students, 41 students do not respond in this part. However, 59 respond in this question where 46 responds are about the topic. That means half of the students does not have not the proper knowledge about the plagiarism.

TABLE - 1

Ph.D.				M.A. (3rd semester)			
SL NO	N.R.	RESPOND	PROPER	SL NO	N.R.	RESPOND	PROPER
Q.1	16	84	74	Q.1	34	66	54
Q.2	11	89	81	Q.2	41	59	46

* NR= NOT RESPONDED

Q.3. I punctually quote the author's name with complete reference when I mention his text

The researcher asked this question from 100 students of Ph.D. and 100 students of M.A. 3rd semester. Out of the 80 respondents from Ph.D. said that they always quote the author's name with complete reference whenever they do some work, while 20 students mark that they seldom give proper references. However, in the case of M.A. 3rd semester respondents, 55 respondents reference the text at all and 29 use it but not for all time. Nevertheless, there were 16 students never quote the author's name when they copy some text. It means that most of the respondents are honest in using the work of others.

Q.4. I pay for the software which I use

In response to the above question 100 students of Ph.D. scholar, 26 students said they always paid for the software they used already. Another side 69 respondents are present who pay for the software for some time. However, we found 5 students who said that they never paid for the software. Other hands in case of M.A. 3rd semester students 18 students are here that paid adequately. Same here, 30 students pay according to the situation, not for full time. Nevertheless, there are 52 students present who never pay for the software's use.

Q.5. I strictly avoid plagiarism while consulting notes from Internet

The above questionnaire researcher gets 60 students who avoid the plagiarism rules when preparing some notes from the Internet, and 35 students follow it irregularly. However, 5 students never avoid plagiarism. In the case of

M.A. 3rd semester students, 40 students avoid the plagiarism and 50 students' follows the middle path. However, 10 students never avoid plagiarism.

Q.6. I forbid others when I find them copying notes from other's text

The researcher asks this question from 100 students of Ph.D. and 100 students from M.A. 3rd semester. 48 respondents from Ph.D. section said they always stop people when they saw copying others' text. Another side is that the 45 respondents follow the middle path, which means they sometimes stop copying but sometimes do nothing. Simultaneously, the 7 respondents found who said that they never stop others from stopping direct copying. In the case of M.A. 3rd semester students 21 respondents who always stop others from copying other text, 63 students are present who select "seldom", which means follow some or avoid sometimes. Nevertheless, 16 respondents are present who never stop copy someone from the Internet.

Q.7. Do you ever suggest anyone buy as E-book form online

The researcher asked this question from 100 students of Ph.D. and 100 students from the M.A. 3rd semester. 42 respondents from the research scholar said they always suggest others pay for E-book or buy for the book. While 47 respondents marked the "seldom", which mean they prefer it for sometimes. However, 11 respondents never prefer to suggest anyone buying the online E-book. On the other hand, in M.A. 3rd semester students, 22 respondents prefer to buy E-books. While 46 respondents who irregularly suggest buying online books. However, 32 students are also present who never prefer to suggest buying E-books.

Q.8. Do you ever suggest anyone buy any software from online?

After evaluating the above questionnaire, the researcher found 27 respondents from the Ph.D. section, who said they always suggest buying software or their product key. We found 67 respondents they follow the middle path, which refers to buy some time but not for the all-time. However, there are 6 respondents present who never prefer to buy the software. After that from the section of M.A. students, 19 respondents always suggest someone buy software online, while 52 students follow it sometimes but not for all time. However, 29 students never suggest buying online software.

Q.9. While writing an assignment, if I found one on the Internet, I copy the same and submit it.

The researcher asked this question from 100 students of Ph.D. and 100 students from the M.A. 3rd semester. Out of the 10 respondents said that they always try to found on the Internet, and if they found the same topic, they directly copy the assignment without any changes. Another side 36 respondents who try to avoid copy sometimes. However, in some cases, they also copy the same text. One more class was also present here who directly copy the text without any changes. The number of respondents was 54. Another side of M.A. 3rd semester students 26 students directly copy and paste the assignments, while 44 respondents sometimes do it but sometimes avoid it. However, 30 students are also present who never do the same assignment as found on the Internet. Which mean a considerable number was copying the internet context without any changes and proper references.

TABLE- 2

Ph.D.

SL NO	ALWAYS	SELDOM	NEVER
Q.3	80	20	0
Q.4	26	69	5
Q.5	60	35	5
Q.6	48	45	7
Q.7	42	47	11
Q.8	27	67	6
Q.9	11	36	54

M.A. (3rd SEMESTER)

SL NO	ALWAYS	SELDOM	NEVER
Q.3	55	29	16
Q.4	18	30	52
Q.5	40	50	10
Q.6	21	63	16
Q.7	22	46	32
Q.8	19	52	29
Q.9	26	44	30

Q.10.The more a person uses ICT, the more he indulges in copy and paste.

From the collected data out of 100 students of Ph.D. 87 respondents think that if someone uses ICT more and more, they must use the copy and paste, but 13 respondents think that using ICT never affects the copy-paste mentality. Another side from the M.A. students 75 students thinks more use of ICT affects the copy-paste mentality. Another side only 25 students think that there was no change of copy-paste mentality if someone uses the ICT more and more. That means more of the people think that the use of ICT badly affects the copy-paste mentality.

Q.11. Use of entertainment channels like short movies during a break period in the academic programme is not objectionable.

The researcher asked this question from 100 students of Ph.D. and 100 students of M.A. 3rd semester. Out of the 83 respondents think that using ICT in entertainment during the break time is not objectionable. However, 17 people or respondents think that the use of ICT in entertainment purpose is objectionable. Another hand of sample 63 M.A. students thinks that using ICT in entertainment during the break period is objectionable. However, 37 disagree with the statements. Which mean according to them, the tools of ICT can be only useable in the academic purpose.

TABLE-3

Ph.D.			M.A.(3rd SEMESTER)		
SL NO	AGREE	DISAGREE	SL NO	AGREE	DISAGREE
Q.10	87	13	Q.10	75	25
Q.11	83	17	Q.11	63	37

Q.12. I do not know about the ethics of ICT

In this section, researchers found that 13 respondents said they do not know the ethics of ICT from Ph.D. students. On the other hand, there are 87 respondents present who know the ethics of ICT. On the next part from the M.A. students, researchers found that 41 students do not know about the ethics of ICT, only 59 students said they know about the ethics of ICT. Which mean the more considerable amount of the sample knows the ethics of the ICT.

Q.13. I pay for E-books which I read.

The above statement researcher found that only 31 students from the Ph.D. section accept that they pay for the E-books. However, 69 respondents are also present who said that they never paid for the E-books. At another side out of 100 M.A. students, 22 agreed with the statement, when 78 students disagree with the statement. That means maximum students never pay for the E-books used by them. They collect books from various fake websites and senior students.

Q.14. I think there is no harm in downloading other's PPT and presenting it as one's own in case assignment on PowerPoint presentation as given.

The researcher asks this question from 100 students of Ph.D. Out of the 17 respondents said no harm in downloading others' PowerPoint presentation and presenting as own or self-made. However, 83 respondents are also present who think that was plagiarism or stolen another's intellectual thinking. On the other hand, 37 students out of the 100 students of M.A. 3rd semester thinks that there was no harm in this case. However, left 63 students to think that it is a crime or it is harmful.

Q.15. Sharing of E-books without paying should not be punishable.

After calculating and evaluating the data researcher found that out of 100 respondents of Ph.D. 14 students who think that the sharing of E-books without paying is not punishable. However, 86 respondents think that sharing of E-books without paying is punishable. Then in the case of M.A. students, 36 students think that it is legal.

Nevertheless, another 64 respondents think that it is punishable. Which represent that maximum respondents think that sharing of E-book without paying is illegal.

Q.16. To me, uninstalling any software after the trial period is the right act.

The researcher asked this question from 100 students of Ph.D. out of the 49 respondents said that it is their right to uninstalling of the software after the trial period. However, 51 respondents think that is not their right. For the next case, the researcher found that 77 M.A. students think that uninstalling of the software after the trial period is their right. However, 23 students only think that it is illegal. From where we can conclude that maximum students fixed their mind use without pay. Moreover, some of them said that till date, they used that software with crack version.

Q.17. I never try to look into other's private social account using the Internet.

The collected data researcher found that 78 respondents form the Ph.D. scholar and never look into others' social accounts privately. However, 22 respondents also present who face looking at others' private social accounts. Another hand from the M.A. students, 64 students agreed with the above statement, while another 36 students deny it. After calculating the total researcher, an excellent thing present in the student's mind looking into other private social accounts is a horrendous crime.

Q.18. Use of ICT is badly influencing ethical values in higher education.

The researcher asked this question from 100 students of Ph.D. out of the 62 respondents think that use of ICT badly influences the ethical values in the higher education, when 38 respondents think that use of ICT does not influence the ethical values the higher education. After that, 52 respondents think that using ICT badly affects ethical values when 48 disagree with the statement. This represents that half of the sample said it is the effect, but the other half said it does not.

Q.19. Cheating of one's intellectual property (copy his text without mentioning name) is a crime.

In response to the above question, the researcher found that 96 respondents from the Ph.D. agreed that cheating of one's intellectual property is a crime. However, on the other hand, 4 students think that is no crime. From the next part of the data, 72 students from the M.A. think that is a crime when another 28 does not agree with the statement. That means a maximum of the respondents aware of the plagiarism the laws related to the cheating and the stealing of intellectual property.

Q.20. Presently, most of the students and teachers have indulged in copying and pasting other text.

The researcher asked this question from 100 students of Ph.D. 83 respondents agree that presently most of the students and teachers have indulged in and paste. However, 17 respondents disagree with the statement. Nevertheless, 92 students agreed with the above statement, while 8 students think not all the students and teacher indulged in copy-paste. Which refers they avoid the copy-paste of text.

TABLE-4

Ph.D.

SL NO	YES	NO
Q.12	13	87
Q.13	31	69
Q.14	17	83
Q.15	14	86
Q.16	49	51
Q.17	78	22
Q.18	62	38

M.A.(3RD SEMESTER)

SL NO	YES	NO
Q.12	41	59
Q.13	22	78
Q.14	37	63
Q.15	36	64
Q.16	77	23
Q.17	64	36
Q.18	52	48

Q.19	96	4	Q.19	72	28
Q.20	83	17	Q.20	92	8

After calculating both data, the total table is as below:

Table:

For question number 1 and 2

SL NO	NOT RESPOND	RESPOND	PROPER
Q.1	50	150	128
Q.2	52	148	127

For question number 3 to 9

SL NO	ALWAYS	SELDOM	NEVER
Q.3	135	49	16
Q.4	44	99	57
Q.5	100	85	15
Q.6	69	108	23
Q.7	64	93	43
Q.8	46	119	35
Q.9	36	80	84

For question number 10 and 11

SL NO	AGREE	DISAGREE
Q.10	162	38
Q.11	146	54

For question number 12 to 20

SL NO	YES	NO
Q.12	54	146
Q.13	53	147
Q.14	54	146
Q.15	50	150

Q.16	126	74
Q.17	142	58
Q.18	114	86
Q.19	168	32
Q.20	175	25

Findings of the study

The findings of the present study are as follows:

i. Concept of ethics of ICT:

After evaluating the data, in the case of Ph.D. scholars, ' 84% respondents respond, when 16% have no idea about the topic. Another side in the case of M.A. students' only 66% of students' responses is this question, while 34% do not respond to this question.

ii. Plagiarism concept:

From the collected data, the researchers can find out that from the Ph.D. section, 89% of respondents respond in this question, while 11% do not respond. Another side there 59% respond in this part, and 41% do not come from the M.A. students, but it is a critical issue while we can see there 26% do not have any idea of plagiarism higher education level.

iii. Proper referencing:

We can find there was a lack of mentality of referencing. We can say that we avoid top referencing or do not have the proper knowledge of referencing. In this study, we can find out that from the Ph.D. section, 80% of students are present, who are aware of referencing, while 20% of students seldom choose. On the other hand, 55% of students are aware of referencing, while 29% seldom select an option. However, 16% of students said that they never gave proper referencing. Therefore, the percent is about to 1/5 the never uses proper referencing in M.A. students.

iv. Use of paid software:

From the collected data, the researchers found that huge discrimination in the use of paid software. From the Ph.D. section, only 26% of students present, who paid for all time, while 69% agreed with the seldom option. However, 5% of students never paid for their software, reflecting that the maximum students never paid software. Now in the case of M.A. students where 18% of students paid full time. 30% of agreed with seldom, and 52% of students said never. From the above data, it can be said that the maximum number of students never paid for their software, which can also be notable as lack of ethics of ICT.

v. Use of paid E-books:

Here the researchers tried to find out the percent of students, who paid an E-book. After evaluating, the data researchers conclude that 31% scholar paid for E-books, while 69% of Ph.D. students do not pay for E-books. Another side only 22% of students paid for E-books, but 78% do not pay for E-books. From here, the researchers conclude the most of the students do not pay for E-books. This is also a lack of awareness of the ethical value of ICT.

vi. Copying notes and assignment:

In the case of copying notes and assignments, the researchers found that around 60% of Ph.D. students said they never plagiarised from any digital resources, while 5% said they directly copied from digital resources. Left, 35% of students, said that they take the middle path. Another side the M.A. students, 10 % of students directly copy the same, but 40% always avoid copying. While left 50% take the middle path. After that, research finds that the maximum of the students indulged in the copy and paste formula that is also a lack of ethical values.

vii. Look into other's private social account:

Researchers asked this question to the respondents. The researchers concluded that 78% of students never try to look into another's private social sites, while 22% said they try to look at another account. In another hand from the M.A. section, 64% of students said they never try to look another's account, while 36% of students disagreed with the statement. Researchers find out that the maximum students who have sufficient knowledge to look into others' social accounts are a terrible attitude towards ethical values.

viii. Factor influencing ethical values:

During the work, the researchers asked the students "was the use of ICT badly influencing the ethical values in higher education". After calculating the response, researchers found that 62% of Ph.D. students marked "Yes", while 38% of students marked "No". At another side, 52% of M.A. students agreed with the statement, while 48% of students marked "No". From the above data, researchers conclude that around 57% of students think that it is badly influencing the ethical values and 43% sample think that it does not affect the ethical values at higher-level education. The numbers of respondents are more significant who think that ethical values degraded by using ICT.

Conclusion:

After analyzing the whole data, the researchers conclude that students know the ethics and ethical issues of ICT. However, in practical life, the values degrade while using information and communication technology(Thamarasseri, 2013). They have the idea of ethics, plagiarism, ethics values. However, calculation says that lack of awareness. In the case of software and E-book, maximum knows that they do it wrong. Nevertheless, when they saw others use the crack versions and share without pay, they also became a part(Russo-Netzer et al., 2020). One more case here maximum of students agreed with that use of ICT badly influencing the ethical values. Therefore, it can be said that everything is known, but it became valueless in practical life(Nasreen & Chaudhary, 2018).

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MOBILE PHONE AND ITS IMPACT ON ACADEMIC WORK ENGAGEMENT

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ABSTRACT
Education is the key to socio-economic development. The advancement of mobile technology has contributed to universal access to education and COVID -19 has further triggered the penetration of these devices in the college education. Young students now see mobiles phones as an extension of themselves and are increasingly becoming dependent. This research paper aims to explore the dependence (addiction) of millennial students on their mobile phones and to study the relationship between mobile addiction and academic work engagement. It also aims to investigate the gender difference in mobile addiction and student academic work engagement. The responses were collected from 211 postgraduate students. Results reveal that the mobile addiction is significantly related to student academic work engagement. Significant gender difference was found so far as the dimensions of mobile addiction and academic work engagement are concerned. The paper identifies negative influence of mobile addiction on student academic engagement. Extant literature review shows that, although mobile addiction has been studied in the past, but not much published work is available in the context of academic work engagement especially in the Indian context. The study plugs in this gap.
Keywords: Web 2.0, Mobile Addiction, Mobile Learning, Academic Work Engagement, Mobile Stress, Engagement, Dedication, Gender, Millennial.

INTRODUCTION

Recent advances in information technology have unlocked new domains of education research. Education is a key determinant of income, and spending on quality education is seen as an investment for a better future (Qazi, Raza, & Jawaid, 2014; Davies 1998). Education is a route to better social and economical development (Katz, R.,2001; Pritchard &Jones, 1996). The teeming young people opting for higher education and technical skills lead to capacity and resource constraints especially in developing societies. This gap could be bridled through effective usage of information and communication technologies (Volery& Lord, 2000). New technology and ideologies have changed the face of education. Technology has enabled access to information at an extremely low cost and has diluted all barriers leading to movements like free software movement or open source software. Massachusetts institute of technology furthered this ideology and announced its open course ware (http://ocw.mit.edu). Other online educational initiative, like Coursera, EdX (http://www.edxonline.org)and MOOC (massive open online courses), SWAYAM (https://swayam.gov.in) have all brought classroom courses at the students' doorstep and have empowered and enabled the students to make pragmatic choices about their education. These reduce the digital divide among the students and have brought students from less developed countries into the main stream of knowledge economy. Technology today opens new vistas for millennial students by enabling learning experience even during the COVID lockdown. The millennial are individuals who are born from 1982 to 2002 (Wilson &Gerber, 2008). The millennial students are born in the age flourishing with technological gadgets like personal computers and mobile phones are often referred as digital natives (Prensky, 2001). Their access to information, technology, and usage of digital media is greater than that of any prior generation. Technology, rather handheld devices (mobiles) are increasingly finding place in learning environments, as they empower the educators and learners by providing multi communication interaction and control over place and time (Medzini, Meishar-Tal, & Sneh, 2015). Usage of mobile technologies in campuses is further triggered by COVID lockdown the Wi-Fi campuses internet has undoubtedly enhanced the access to information and added to convenience of the learners. Millennial students today cannot see their existence without their mobile phones (Moeller et al, 2010; Belk, 1998).

This inseparable gadget (mobile phones) which entered in the class rooms to assist learning has opened a Pandora's Box. The millennials are hooked to these devices for long hours and indulge in surfing through various apps. Research in the western context has reported, that surge in usage of mobile communication is like addiction which leads to academic distress (Brady 1996, Murphy 1996). Therefore, it is imperative to explore the relationship between mobile usage and academic work engagement among the Indian millennial, who are the world's second largest consumer of mobile phones and mobile internet. The research paper aims to explore the dependence (addiction) of millennial students on their mobile phones and to study the relationship between mobile addiction and academic work engagement. It also aims to investigate the gender difference in mobile addiction and student academic work engagement.

LITERATURE REVIEW

Web 2.0 and New Learning Technologies

Reilly (2005) explains web 2.0 as services that get better as more people use it. It harnesses collective intelligence creating network effects through an 'architecture of participation', delivering software as a continually updated service that gets better as more and more people use it, and going beyond the page metaphor of Web 1.0 to deliver rich user experience. Web 2.0 technology includes blogs social networking sites (Komiko 2007), instant interactivity through platforms such as YouTube, Viber, Facebook and Twitter. Thus web 2.0 has played a role of catalyst to make internet more sociable, user friendly, interactive by diminishing the physical barriers, adaptable and above all cost effective.

Research supports and highlights the usage of web 2.0 tools such as blogs, web communities and wikis in collaborative learning (Thompson & Absalom, 2011; Tal-Elhasid & Meishar-Tal, 2007). Educators and facilitators are increasingly using these new tools in educational context for finding, sharing and communicating knowledge and for engaging students. Web 2.0 tools in training and learning and have stimulated the usage of technological devise like personal computers which now are replaced by the hand-held devices or mobile phones giving way to a new era of mobile age.

Adoption of Mobile and Mobile Internet

In the last decade, mobile phones have metamorphosed from a communicating device to a multimedia device. It has substantially evolved from only voice call and text message, to now be used as a compact personal hand-held computer. This decade has witnessed continuous improvement in the speed of mobile internet, thus converting phones into pocket computers. Millennial have adopted mobile phone technology with an extraordinary fervour (McCoy, 2016). Mobile phones today are not just a gadget but a smart device, penetrating across the society including developing countries like India. The report by TRAI (2017) reveals that India is a growing mobile market as the surge in mobile usage is predicted. India has 1187 million subscribers. It constitutes of 680 million urban and 506 million rural subscribers, with 1248 MB of average data usage per subscriber per month. This 2017 data has undoubtedly seen a surge in 2018. According to a report "The changing mobile broadband landscape" compiled by Ericsson (2015), sixty seven percent of the mobile users are within the age bracket of 20-40 out of which 38% are millennial i.e. (20-30 yrs. of age), thus making it a significant segment to study.

Role of Mobiles in Learning

Mobiles have become an integral part of the training and learning ecosystem. The millennial learners manage an array of personal learning projects, consequently having frequent and extended periods of engagement with technology (Vavoula & Sharples 2002). They are on the move. The millennial learners today are not bound by physical distance, fixed class timings and have access to learning options at any place and at any time at their convenience. Thus, learning with mobile may even happen in transit (Sharples, Taylor, & Vavoula, 2005). Mobile phones enable learner-centric learning by empowering millennial learners to tailor the access to information and thus meet their academic and educational objectives (Sharples et al., 2007). Learners take active role in learning and take greater responsibility in the learning process and develop the ability to search, identify, manipulate, and critique existing information. Besides easy and customized access, web technologies and mobiles have broken the cost barrier (Visser &West, 2005). In developing countries and remote areas with less infrastructure facilities these devices empower the learners with access to information and knowledge in cost effective manner. The ubiquitous mobile phones and internet have given access to learners of different economic strata and has brought about inclusiveness of the have-nots into the knowledge ecosystem (VanWeert, 2005). But all is not rosy in this new mobile era. Research exhibits that mobiles which came as a boon to encourage student engagement and immersion in learning also has a flip side. Excessive dependence on technology, often leads to physical and psychological ailments and disorder and academic distractions.

The Flip Side

The mobile phones with internet assists research and provide access to information. They are also used for interpersonal communication, and for business transactions. However, they can be used to access pornography (Owens et al., 2012), excessive gaming(Moore, 2012) or for chatting for long hours, and even gambling(Griffiths, 2007).Millennial who have grown in a restrained environment (as mobile phones and mobiles internet became affordable in India only in 2014) when suddenly exposed to easy access of information (internet) through the world of mobile devices and mobile internet, tend to spend long hours (Young, 1999) using these devices. Young millennials besides using these devices for learning also indulge in seeking entertainment. Excessive usage has lead to inevitable consequences such as impulsiveness, addiction, and physical ailments among the millennial (Dlodlo & Mahlangu, 2013). The ubiquitous and pervasive use of mobile has led youth to become addict (Roberts, Yaya & Manolis, 2015; Salehan & Negahban, 2013; Shambare et al., 2012; Young, 1999). A longitudinal study conducted by Jun (2016) on Korean adolescents revealed that the mobile addiction increases with time and affected

depressive symptoms. Mobile phones have emerged as a source of potentially addictive behaviour (Lane &Manner, 2011). The mobile phones paired with mobile data offers content and applications that are highly engaging may lead to problematic use (Tosell et al., 2015) or addictive behaviour (Krishnamurthy & Chetlapalli, 2015).

Addiction can be described as high dependence on a particular thing (Park, 2005). Mobile addiction can be explained as a situation where an individual intensely indulges in the usage of mobile thereby sacrificing other commitments. Griffiths (1996) believes that technological addiction is a subset of behavioural addiction. Researchers suggest that mobile addiction among youth is triggered by the excessive use of social networking sites such as Facebook, Instagram etc (Salehan & Negahban, 2013). Individual's psychological characteristics such as social extraversion and anxiety (Hong, Chiu, &Huang 2012), their self-esteem, self-efficacy and self-control (Khang, Kim, Kim, 2013) and personality (Roberts, Pullig, &Manolis, 2015), makes some individuals more susceptible to mobile addiction. Relationship between addiction and stress level (Chiu, 2014), health (Leena, Tomi, and Arja, 2005) and depression (Yen et al., 2009) have been established by the researchers. Impact of mobile addiction on the social life of the students was studied by Ozkan et al. (2015), however very scanty published literature is available on mobile addiction and its relationship with academic work engagement of the students (Yeap, et al., 2016; Samaha&Hawi,2016) particularly in the Indian context.

Researchers have described "engagement" as a key control in attitudes, behaviour, and performance of individuals (Richman, 2006; Harter, Schmidt, & Hayes, 2002).

Research on engagement has been done in the context of corporate, but very little research has been published on the academic engagement of students in educational institution. The academic engagement is associated with psychological well-being, enjoyment and absorption in college activities (DeakinCrick & Goldspink, 2014). Engagement research is important as an engaged student will be productive and creative (Harter et al., 2002, Schaufeli et al., 2002). Student engagement can positively affect the learning and development of the student (Carini Kuh & Klein, 2006). Schaufeli et al. (2002) defines engagement as a phenomenon comprising of three facets i.e. vigour, dedication and absorption. An engaged student will exhibit "resilience" "enthusiasm" and "full concentration" in his studies. Students who find emotional solace while on their mobiles (emotional lift) and are immersed in the virtual world forgetting the surroundings (compulsive usage) and spend long hours on mobile are mobile addicts. This addiction causes stress and exhausts them of the alertness and energy required to be happily engaged in their studies (Kirschner & Karpinski.2010; Seppala, et.al. 2009). Thus we can hypothesize that mobile addiction will be negatively correlated with student academic engagement.

Hypothesis One: Mobile addiction is negatively related with the dimensions of student academic work engagement.

Literature on gender and technology use suggests that the gender differences exists in the usage of mobile phones (Aparicio-Martínez et al., 2020; Hakoama, &Hakoyama, 2011; Haverila, 2011) and that gender influences mobile addiction (Salehan & Negahban, 2013). Geser (2006), promulgated that unlike men, women utilize mobile phone as a social tool. Women students prefer indirect communication and therefore rely more on technology. The different motive of usage generates unique use patterns across different technologies (e.g., the Internet). A study by Chen et al (2017) revealed that men are addicted due to usage of game apps and women spend more hours on phone using multimedia applications and social networking services. Studies support that that female college students sent more texts and talked longer on their cell-phones that their male counterparts (Junco et al., 2010), and possess a higher level of dependence on their mobile phones than compared to men (Geser2006; Hakoama & Hakoyama, 2011). Thus, the pattern of abuse is greatest among females (De-Sola Gutiérrez et al., 2016). Jenero et al. (2007) in their research revealed that excessive dependence on mobile phone is associated with anxiety and insomnia, particularly in females. However few researches have also cited insignificant role of gender in mobile addiction (Perry & Lee, 2007). Based on the existing research we can promulgate hypothesize two - *Hypothesis Two: Gender influences mobile addiction and academic work engagement*

METHOD

To empirically test the excessive dependence (addiction) of young students a survey design was used to obtain the required information. The population of the study comprised of undergraduate students of different colleges and universities of Delhi. Delhi is a microcosm for India as (Sengupta, 2007) people coming from all corners of India are settled here. Universities and undergraduate colleges which have wi-fi enabled campus and promote web usage by giving free access to internet to their students were randomly selected. Data for this single cross-sectional study were collected from 400 undergraduate students of different colleges and universities in national capital region of India using pen and pencil questionnaire. Out of 400 filled questionnaires, only 211were completely filled and used for the study. The total sample of 211 comprised of 128 male respondents and 83 female respondents. The

mean age of the sample was 23.9 with a standard deviation of two. All the respondents were undergraduate students pursuing courses in design, engineering commerce and humanities. Young undergraduate students were studied majorly because they represent 50% of the total Indian population and they also represent a segment which constitutes 75% of total smart phone users of India.

Measures and Psychometric Properties

The users find mobile usage an extremely pleasant experience, which gives them instant emotional solace and get engrossed with their devices unaware of their surroundings resulting in little sleep, limited physical activity and stress (Young, 1998). Literature on scales to measure mobile addiction has used inconsistent criteria, making it difficult to adopt in different cultural settings (Byun et al., 2009). Therefore, based on the past validated scales, items were generated to measure addiction. The mobile addiction is measured on three dimensions i.e. emotional lift, compulsive usage and mobile stress. Emotional lift measured the feeling of happiness, fun and contentment the user feels after using mobile phones. It had items like "using mobile phones makes me happy", Compulsive usage referred to using mobile phone unconsciously, being immersed in it, so as to lose the touch with the surroundings. An example of the item measuring compulsive usage is "while using the mobile phone, I am not aware of how long I have been there", and mobile stress referred to some subtle statements probing psychosomatic illness with 3 items, such as "I feel like phone is ringing or vibrating, but it isn't". The items of these three dimensions were anchored on a 6-point scale ranging from 1 as strongly disagree to 6 as strongly agree. The reliability coefficient of emotional lift, compulsive usage and mobile stress was 0.832 (6 items), 0.757(4 items), and 0.756 (3 items) respectively.

Academic work engagement was studied using Utrecht Work Engagement Scale (UWES) (Seppälä, et al., 2009) which has been widely cited and used by academic researchers (Loscalzo, & Giannini, 2018; Closson, & Boutilier, 2017; Nerstad, Richardsen, & Martinussen, 2010; Shimazu et al., 2008). It consisted of 17 items measuring three dimensions i.e. vigour, dedication and absorption. To check the reliability of the scale cronbach alpha was calculated for the three dimensions of the scale: vigour (6 items; $\alpha = 0.671$), dedication (4 items; $\alpha = 0.783$), absorption (6 items; $\alpha = 0.833$). Vigour was measured with items statements which had words like "energy", "fun" "feel strong and vigorous". The dimension dedication was measured by items statements like "I find my work that I do full of meaning and purpose" and absorption included items like "It is difficult to detach from my work" or "I get carried away when I am working" etc. The statements were anchored on a 6-point scale ranging from 1as never to 6 as always. Thus, a high score on the scale indicated high academic engagement among the respondents.

RESULT

The data of 211 respondents was statistically analyses using SPSS. The results are presented as follows:

Descriptive Statistics

Mean and standard deviations of the dimensions of mobile addiction and academic work engagement were calculated, as this helps in understanding the young respondents better (table1). Means and standard deviation was calculated separately for each of the three dimensions of mobile addiction and academic work engagement.

Table 1. Mean and Standard Deviation(N=211)

Dimensions of Mobile Addiction	**Mean**	**Standard Deviation**
Emotional Lift	4.62	1.23
Compulsive Usage	4.94	1.34
Mobile Stress	4.41	1.36
Dimensions of Student Work Engagement	**Mean**	**Standard Deviation**
Vigour	3.79	.716
Dedication	4.02	.890
Absorption	4.32	.958

It can be observed from Table 1 that the mean of all dimensions of mobile addiction is above 4 on a six point scale. The mean for the dimension compulsive usage is highest (m=4.94) hovering around five suggesting that the respondents perceive that they as unknowingly and unwillingly engaged with their mobile phones. The means of the dimensions of student academic work engagement hover around four. The students perceive that they are engaged in their academic work.

Hypothesis Testing

H1: Mobile addiction is negatively related with the dimensions of student academic work engagement

To investigate the relationship between mobile addiction and student work engagement, correlations were computed to examine the possible relationship between the three dimensions of mobile addiction and the dimensions of academic work engagement. Pearson correlation coefficient is a measure of the strength and direction of association that exists between two variables. Pearson correlation evaluates whether there is statistical evidence for a linear relationship among the same pairs of variables in the population, represented by a population correlation coefficient. Table 2 clearly shows that dimensions of mobile addiction are negatively related with the dimension of academic work engagement. The correlations were statistically significant at 0.01 levels. The negative correlation explains that mobile stress and compulsive usage of mobile reduces student academic engagement (vigour, absorption and dedication). However, the dimension emotional lift is not significantly related with any of the dimension of academic work engagement i.e. vigour, dedication and absorption. Thus H1 is partially accepted.

Table 2. Correlations between dimensions of mobile addiction and academic work engagement (N=211)

	Emotional Lift	**Compulsive Usage**	**Mobile stress**
Vigour	.085	-.343**	-.390**
Absorption	-.067	-.341**	-.376**
Dedication	.087	-.253**	-.338**

*** Significant at .01 level.*

In order to determine how an independent variable (mobile addiction) impacts the dependent variable (student academic work engagement) stepwise regression analysis was computed. The strength of the independent variables i.e. emotional lift, compulsive usage and mobile stress in predicting the dependent variable i.e. academic work engagement. The three dimensions i.e., vigour, absorption and dedication are the components of academic work engagement. The three were computed into a single dimension using SPSS software. It was assumed that there is a linear relationship between mobile stress, emotional lift and compulsive mobile usage (independent variables) and their probability to predict student's academic work engagement (dependent variable).

Table 3: Regression Table for Student Academic Engagement

Model	**R**	**R Square**	**Adjusted R Square**
1	.482[c]	.232	.221

Predictors: (Constant), Mobile stress, Emotional Lift, Compulsive usage

Coefficients

Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	Std. Error	Beta		
1	**(Constant)**	55.258	2.750		20.093	.000
	Mobile stress	-2.483	.691	-.288	-3.592	.000
	Emotional lift	.754	.172	.303	4.395	.000
	Compulsive Usage	-2.202	.625	-.300	-3.522	.001

D V: Academic work engagement

The regression output given in Table 3 reveals the value of R square as 0.232. This implies that that 23% of academic work engagement is predicted by the three dimensions of mobile addiction. The regressions model reveals –ve beta values for the two out of three dimensions of mobile addiction i.e. compulsive usage and mobile stress. This shows that these variables are negatively and significantly impact the dependent variable i.e. academic work engagement. Emotional lift with a beta of .303 is a positive determinant of students' academic work engagement.

H2: Gender influences mobile addiction and academic work engagement

To examine the Gender influences mobile addiction and academic work engagement an independent sample t test was computed. The independent-samples t-test compares the means between two unrelated groups (gender) on the same continuous, dependent variable mobile addiction and student work engagement. The results in Table 4 reveal that two out of three dimension of mobile addiction and all three dimensions of academic work engagement shows a significant difference on the basis of gender. Females respondents with a mean of 5.47 find mobile more engaging and indulge in compulsive usage and also feel higher mobile stress (mean=4.27) than their male counterparts. The findings find support in the past works (Salehan & Negahban, 2013). On the dimensions of academic work engagement, the female respondents exhibit significant difference on all the three dimensions i.e. absorb, dedication and vigour. They are significantly less engaged than their male counterparts in their academic work as the mean of vigour (mean=3.49, standard deviation=.874) absorption in academics (mean=3.97, standard deviation=1.08 and dedication (mean=3.34, standard deviation=1.19) is significantly less than that of the male respondents. The above discussion and results enable us to partially accept H2 and accept H3.

Table 4. Comparison of dimensions of mobile addiction and student work engagement

Dimensions of Mobile Addiction	**Male(N= 128) Mean (S.D)**	**Female (N=83) Mean (S.D)**	**t-value**
Emotional Lift	4.70 (.093)	4.59 (1.14)	0.699 (NS)
Compulsive Usage	4.43 (1.19)	5.47 (1.25)	6.067**
Mobile Stress	3.36 (1.14)	4.27 (.835)	6.239**
Dimensions of Academic Work Engagement	**Male(N= 128) Mean (S.D)**	**Female (N=83) Mean (S.D)**	**t-value**
Vigour	4.05 (.538)	3.49 (.874)	6.505**
Absorb	4.48(.905)	3.97(1.08)	3.728**
Dedication	4.38 (.907)	3.34(1.19)	7.190**

*** Significant at .01 level. NS not significant*

DISCUSSION

Mobile technology was introduced in education system to provide accessibility, spontaneity, portability and exciting learning environment to the students. Little was known that it will open Pandora box and would be the cause of student anxiety, stress and would lower the academic work engagement. Recent advances in information technology-hardware, software have led to the steep rise in the mobile adoption and mobile internet adoption. Empowered by the access to the sea of information on a click of button, the young millennial are vulnerable to harmful addictive agents of this device (Kaltiala, et al., 2004) Young millennial represent half of the total Indian population and seventy five percent of the total smart phone users of India and so, it is essential to explore their mobile usage pattern and its impact on them. This makes it imperative to research the mobile usage and its impact. Extant online literature needs to further explain the usage pattern and mobile addiction of Indian youth and its impact on academic work engagement. Quick at adopting new technology (McCoy, 2016; Czaja, 2006; Young, 1999) mobile phones have become an inevitable part of the youth personality, spending long hours using this technology leading to deleterious effect. In words of Shambare et al. (2012, p. 573) mobile phone use is "possibly the biggest non-drug addiction of the 21stcentury".

This study explores the mobile addiction among millennial. The study of descriptive reveals that the millennials feel an emotional high while using the phones and find mobile phone so engrossing that they tend to use the phone unmindfully and for long hours (compulsive usage). Millennial student perceives mobile stress (mean=4.41) which indicate that the presence of psychosomatic disorders among millennial.

Student engagement is an important ingredient for learning (Berman2014; Carini et al., 2006). The present study explores the relationship between student work engagement and mobile addiction. Statistically significant negative association between the dimensions of mobile addiction and academic engagement reveal that millennial students perceive that they lack vigour and dedication in academic work due to compulsive usage of phone and mobile stress. Millennial students at this stage of life cycle tend to overdo by spending long hours on the mobile visiting communities and blogs or slip to more entertaining social media content (Roberts et al., 2014) leading to mobile addiction and consequent poor academic engagement. Literature supports (Yeap et al., 2016) and contradicts the findings (Berman 2014; Carini et al., 2006).

Mobile addiction is influenced by gender (Lee et al., 2014). The study investigates the role of gender on mobile addiction and academic work engagement. The findings reveal that females perceive significantly higher mobile stress and find themselves indulging the compulsive usage of their mobile phones. This finds support in literature (Van et al., 2015; Roberts et al., 2014; Junco & Cotton, 2012; Hakoama & Hakoyama, 2011; Geser, 2006). No

significant difference was found between males and females for the dimension emotional lift. This explains that mobile is important for both the genders and mobile usage is entertaining for millennial students and its usage gives them a "high". Gender difference also surfaced for academic work engagement. The academic work engagement was measured on the basis of vigour and energy for accomplishing academic goals, absorption in studies and focus and dedication towards their academic course. The findings reveal that female respondents experiences less vigour (mean=3.49, standard deviation=.874), poor absorption in academics (mean=3.97, standard deviation=1.08) and lesser dedication (mean =3.34, standard deviation=1.19) than compared to male respondents.

IMPLICATIONS

This study adds to the large pool of evidence of mobile addiction (Salehan, &Negahban, 2013; Roberts et al., 2014). It also contributes to the research by supporting previous findings (Geser, 2006; Hakoama & Hakoyama, 2011; Kirschner&Karpinski.2010). The results identify a relationship between academic engagement and mobile addiction in Indian context. It provides insights to the academicians and educators about the ill effects of unrestrained mobile usage. It's opportune for educators and web developers and students to understand the mobile ecosystem and strike a balance between mobile learning and at the same time control mobile addiction. Findings of the study assist researchers and marketers to better understand the swelling millennial mobile users. The measurements of the mobile addiction traits will be beneficial in the screening of potentially compulsive mobile users, and aid in intervention when such users are discovered

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

This article makes theoretical contributions to mobile addiction literature. Limited researches have been published on mobile addiction and academic work engagement and negligible in the Indian context. However, there are few limitations of this study. The self-developed scale to measure the mobile addiction had excellent psychometric properties, needs further evaluation. A single cross-sectional research design was used in the study. There is no control group in this study, thus it is hard to make comparisons between internet addicts and normal people.

Future research may adopt longitudinal or qualitative research on a larger sample size to yield more accurate data about mobile addiction. The respondents self-reported the responses about their perceptions on mobile addiction and academic work engagement. Their responses may not be their self-belief and may not be accurate and may suffer from common method bias. Also, for in depth understanding of mobile addiction and its impact on academic work engagement, it is vital to identify the mobile phone activities that are likely to slip the user to addiction and whether these relationships differed across gender. As students of this age in Indian context are in an impressionable stage, the peer pressure and group culture need to be considered for study in future research.

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ONLINE EDUCATION DURING COVID -19: CHALLENGES FACED BY HIGHER EDUCATION STUDENTS

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ABSTRACT
The whole world is facing an unprecedented situation due to COVID-19 which has created disruption in every sector. Unplanned closure of the educational institutions has compelled the educators and learners to shift from physical classroom to virtual classroom thus bringing a change in the paradigm of education. It has also created many challenges for the learners especially in higher education and to keep pace with the academic pursuits amidst all this is a great concern. The present research study emphasized on the various challenges (academic as well as psychological) which the students of higher education are facing during this changing scenario. This study falls under the domain of descriptive research conducted on a sample of 200 students studying in higher education and the data was collected by using a self-developed questionnaire through Google forms. For analysis of data, percentage analysis has been used. The results revealed that 28.21% strongly agreed and 26.94% agreed that they are facing academic challenges while 30.94% of students strongly agreed and 28.56% agreed that they are dealing with some kind of psychological challenges during this COVID-19 situation.
Keywords: COVID-19, challenges, online education, physical and psychological health

INTRODUCTION

Novel coronavirus has emerged as a pandemic worldwide and the whole world is facing a different kind of scenario viz. socially, economically and, psychologically due to the outbreak of this deadly virus i.e. COVID-19 (Lee, 2020). This virus has not only changed the vision and thought process of a common man but all the nations are contributing collectively to fight against it. The number of causalities is increasing all over the world and it will continue to increase until there is no availability of the medication and vaccination to deal with this virus. At the global level to break the chain reaction of this virus, WHO and the government of various nations are creating awareness among the masses through various media as well as have opted policy of lockdown. This complete or partial lockdown has short term as well as long term effects on each and every sector at the global level (Brown, 2020). With the passage of time, all the sectors are trying hard to put back on track with certain restrictions but one sector which despite taking help from all kind of digital measures is still lacking behind and that is education (Prokopowicz, 2020). Experts over the globe have the viewpoint that due to Covid-19 universities will remain close for a longer period (Aucejo, French, Araya & Zafar, 2020).

Global Education Monitoring (GEM) Report 2020, suggested that government should rebuild the education system as COVID- 19 is a big setback for the school and higher education (UNESCO,2020). All the stakeholders of education i.e. students, teachers, parents, management, etc. are facing many challenges in this period that are not only affecting their efficiency to work but also creating worries regarding the uncertainty of the future (UNESCO,2020). SCHEV conducted a survey on the challenges of COVID-19 for students which revealed that 80 % of students are concerned with their academics and 34 % of students are facing technological challenges and 76 % of students are concerned with their mental health. (Allison,2020; Johnson,2020). A report published in Indian Express depicted that around 9.3% students from IITs in India are unable to download any kind of study material provided by their institution through online mode and 10% students are not equipped to have access to online class through Zoom, Google meet or Webex, etc. (Mitra,2020). The report further emphasized that students are unable to understand the concepts through online mode because of the communication gap between the teacher and student and missing out of any live session further creates the problem for them as they don't find any other way to clarify their academic queries (Mitra,2020). In the developed countries 89% of college students are not

facing any kind of internet and technological problems (Osborne, 2020). Moreover, students are facing stress and anxiety due to social isolation, the burden of academic work, etc. Many higher education students who are about to complete their graduation or post-graduation programs are having mental stress at conscious as well as unconscious level due to their pending work in the form of dissertations, projects and assignments (The Guardian, 2020).

Majority of the students also believed that they are experiencing a new kind of moving learning experience. According to a survey 60% of students agreed that COVID-19 has increased virtual or collaborative learning (Merinoni, Land & Jensen,2020).Besides these challenges: distractions and time management, self-motivation, and uncertainty of the future are some issues to which college students have to deal with (Friedman, 2020).In many countries providing basic amenities and emotional distress is also a concern (Fairfax,2020).In country like India internet connectivity is the major challenge and moreover online education only cater the need of some theoretical disciplines but the technical subjects which are highly practical based and need use of laboratory are suffering the most. Students who want to pursue their higher education in foreign countries are in stress that this pandemic might influence their future goals and there is fear of losing one year and the researcher who are pursuing their Ph,D. in any discipline also suffering from the same fear and going through the same kind of anxiety, although the higher education ministry has allowed them extensions but still break in the continuity of the research work has ruined their work habits. Moreover, there are some pedagogical/learning concerns like online exams and tests, development of psychomotor skills, testing of academic integrity and personal distresses also which are hindering the effectiveness of learning during this unprecedented situation(Grajek,2020). Psychological impact of social isolation is serving as a critical distractor causing mental stress, anxiety, and loneliness (CNN,2020; Chen,2020).

In most of the countries now lock down has lifted up and particularly in India ministry of higher education has permitted to reopen the universities and colleges so that technical and practical subjects can be taught in offline mode. But despite of all relaxations students are not turning up and physical presence of the students in the classroom is negligible because of again surge in covid-19 cases particularly in Punjab; this condition is different in various regions of the country. It doesn't mean that students from all over the world are affecting or facing the same challenges in the same proportion there are some characteristics which differentiate their level of suffering, they are affecting disproportionately. Students belonging to low socioeconomic status and those who belong to rural areas may have inadequate facilities for learning like lack of smartphones, violent home environment, private and special space for learning, etc.(McCormic,2020). The postgraduate students are realizing their dependence on others to achieve their professional goals. Students are feeling lonely and as a result unable to focus on their education and facing a high level of anxiety. In the present scenario of the COVID-19 pandemic, this study has been taken up to assess the challenges faced by the students of higher education institutions due to online education.

RESEARCH QUESTIONS

The aim of the present study is to get the answers of the following research questions:

Q. What are the psychological challenges faced by students of higher education institutions?

Q. What are the educational challenges faced by students of higher education institutions?

RESEARCH METHODOLOGY

Descriptive research design was employed to conduct the present study. A sample of 200 higher education students of different colleges (Government, self-financed, government-aided) affiliated to Guru Nanak Dev University, Amritsar, and having different streams (Science, Social science, and information technology) was taken through purposive sampling technique who have had an experience of online learning. A self-constructed questionnaire in the form of five point likert scale (Strongly Agree, Agree, Neutral, Disagree, Strongly disagree) was developed on the basis of the psychological as well as academic challenges faced by higher education students. At the initial stage, a total of 25 statements were framed which were later on reduced to 16 after having interviews and interaction with students on the digital platform. Responses of the students were recorded through Google form developed by the investigator. For analysis of data percentage analysis has been used.

INTERPRETATION AND DISCUSSION OF THE DATA

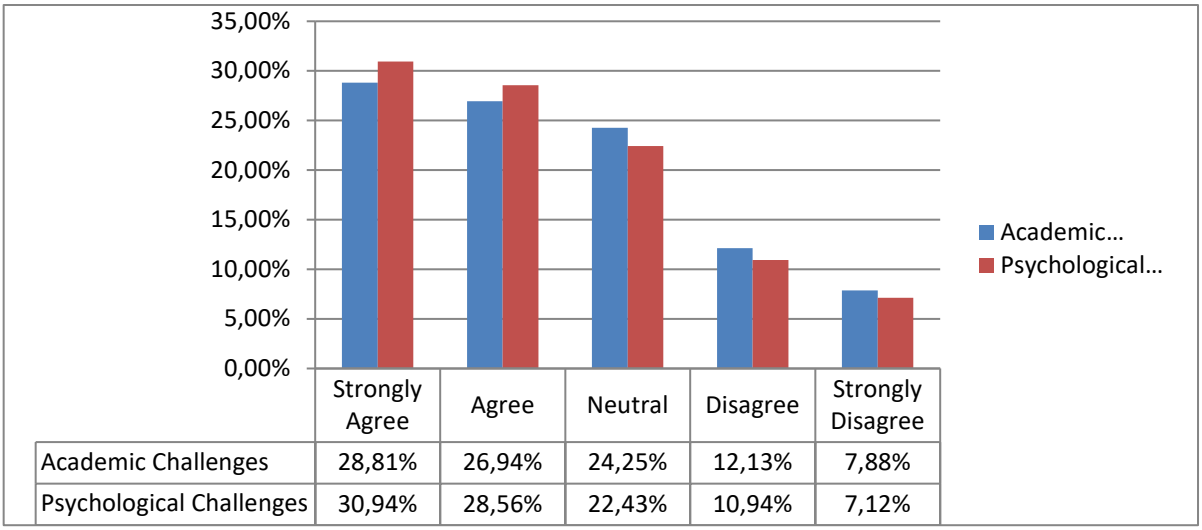
Statement wise percentage responses of the students are given in the tabular form. Interpretation and discussion of the data collected are presented as follows:

Table 1: Responses of the Students Regarding Academic Challenges

S.no	Statements	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1.	I think I have to replan my goals keeping in view the changing situation.	21%	29%	29%	15%	06%
2.	I am facing problem of internet connectivity for online learning	34%	22%	22.5%	13.5%	08%
3.	I don't have knowledge of handling various applications and tools used for online learning	16.5%	20.5%	26.5%	20%	16.5%
4.	I believe that COVID- 19 will definitely effect employment opportunities	48.5%	24%	12%	7.5%	8%
5.	I am in dilemma to choose alternative future plans	23%	28%	30	12.5	6.5
6.	I believe that COVID-19 has limited the educational opportunities	32%	30.5%	21%	11%	5.5%
7.	I believe that this crisis has given importance to a new kind of moving learning experience to all of us.	30.5%	34.5%	23.5%	4.5%	7%
8.	I have got into the habit of piling up my work as there is no check on me.	25%	27%	29.5%	13%	5.5%

Table 2: Responses of the Students Regarding Psychological Challenges

S.No	Statements	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1.	I am in stress regarding uncertainty of future	30%	31.5%	21.5%	10.5%	6.5%
2.	I am feeling emotionally unstable.	20%	18.5%	32%	17%	12.5%
3.	Social isolation has affected my interpersonal relationships	19.5%	25%	24.5%	19%	12%
4.	Increases in screen time have affected my physical and mental health	41%	23.5%	24.5%	6%	5%
5.	I feel that I need some self-motivation	36.5%	35%	18%	5.5%	5%
6.	I need to develop time management skills to improve mental health.	39.5%	39%	15.5%	4%	2%
7.	I am unable to concentrate on academics which is increasing my anxiety level.	34.5%	26%	19.5%	14.5%	5.5%
8.	I am feeling lonely even though the digital tools are offering ways to connect.	26.5	30%	24%	11%	8.5%



	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Academic Challenges	28,81%	26,94%	24,25%	12,13%	7,88%
Psychological Challenges	30,94%	28,56%	22,43%	10,94%	7,12%

Fig.1 Showing Percentage of Academic and Psychological Challenges Faced by Higher Education Students

DISCUSSION

From the Table 1and and Fig. 1 it is observed that 48.5 % of students strongly agreed and 24% agreed that in the present scenario as well as in immediate future employment opportunities will definitely suffer and there will be a dearth of employment opportunities. In India most of the recruitment process in every sector has now got postponed due to this pandemic. On campus placements for students has also been effected. Increase is unemployment is also expected (Jena, 2020). 34% of students strongly agreed and 22.5% agreed that they are facing internet connectivity problems, despite of the fact that the major population of respondents belonged to urban areas. COVID-19 has disclosed the digital inequalities in India. A report published in Business Today, 2020 stated that, "With more than 630 million subscribers, the country is home to the world's second-largest internet user base. But connectivity is a challenge as mobile data is the main source of internet." 32% of students strongly agreed and 30% of students agreed that this critical situation has limited their educational opportunity as many students are usually interested in studying abroad and due to the prohibition of international migration they have to choose some academic alternatives. An educational survey was done by education.com on the impact of COVID -19 pandemic on the future plans of students who want to study in a foreign nation and the results revealed that the students who were postponing their academic plans or choosing other alternatives, amongst them 59% of students choose the alternatives which will provide them financial benefits and 41% agreed that they will be stick to their already decided educational plans (Pang,2020). 30.5% of students strongly agreed and 34.5% agreed that this crisis has given importance to new kinds of moving learning experiences as they came to know about various new technological applications and digital platforms for learning. Only 16% of students agreed that they don't know how to handle the new learning platforms. 25% of students strongly agreed and 27% agreed that they have developed the habit of pilling up of their work as there is no check and strict supervision of the teacher on them. According to survey approximately one fourth of the sample students has started devoting more time to their academics borne in mind the present situation, while another one quarter has started taking their academics more leisurely and has decreased their study time (Aucejo, French, Araya & Jafar,2020). 23% of students are in dilemma regarding the choice of alternative future plans, they are confused rather in tension regarding the uncertainty of the future, and 21% of students strongly agreed that they have to replan their future goals. 16.5% of students strongly agreed and 20.5% agreed that they don't have knowledge of handling various applications and tools related to education because of lack of exposure to these in their earlier education.

As far as psychological challenges (Table 2 and fig.1) are concerned, it can be observed that in 30.94% of students strongly agreed and 28.56 % of students agreed that they are facing various psychological challenges. Further elaboration represented that 41% of students strongly agreed and 23.5% agreed that due to online education their screen time has increased and such an increase has affected their mental as well as physical health. Research conducted by Rogers Behavioural Health (2020) suggests that, "Increased screen time may be related to a decrease in both sleep quality and sleep duration. Insufficient sleep, either in quality or duration, has been associated with worsening of various mental health conditions like depression, anxiety and isolation". 39.5% of students strongly agreed and 39% agreed that they due to lockdown and closure of educational institutions their routine of study has totally disturbed and there is a need to develop time management skills so that they can improve their mental health. 36.5% strongly agreed and 35% of students agreed that social isolation has undoubtedly affected their lifestyle and there are many factors like fear of this pandemic, financial crisis etc. which are creating depressing environment so they need self-motivation in this crisis time. Loneliness occurred due to isolation and seclusion

has developed sense of dejection, depression and even impose substantial lunacy to those who faces such situation during COVID-19 (Brooks, Webster, Smith, Woodland, Wessely, Greenberg & Rubin., 2020). 34.5% of students strongly agreed and 26% agreed that they are unable to concentrate on their academics which had increased their anxiety level. Due to restrictions on social and educational life not only students but everyone is feeling anxiety resulting into lack of concentration, increase in laziness and over occupancy of mind with negative thoughts. 20% of students strongly agreed and 18.5% agreed that they feel emotionally weak as they are not getting enough personal space and a proper outlet to express and share their feelings and fears with their friends and spending more time with media which further contributing in their mental and emotional disturbance.30% of students strongly agreed that they are in stress regarding the uncertainty of the future while 21.5% of students are neutral in this case. Lockdown and further closure of the educational institutions for a longer period of time has created confusion in the mind of the students regarding their future educational and professional goals. 26.5% of students strongly agreed and 30% of students agreed that they feel lonely even though the digital platforms are offering so many ways to connect. Personal touch has somewhere lost due to this pandemic and students are not able to coping up with stress and storms. Only 19.5% of students strongly agree that social isolation has affected their interpersonal relationships, it means social isolation has not adversely affected the interpersonal relationships of the students. They still have faith in their friends and social circle.

FINDINGS

Due to COVID-19, educational institutions are facing many challenges and moreover, realized the need to upgrade the infrastructure and technological knowledge to meet the requirements of virtual classroom (Jena, 2020). In the present study, the top three educational challenges faced by students were limited employment, educational opportunities and internet connectivity issues. In the present survey study although 61% of respondents were belonging to the urban areas and 33.5% of the sciences and 17% of information technology stream still they were facing internet connectivity and technology handling problems. As far as psychological challenges were concerned, when students are getting education through online mode, their screen time has increased and they believe that this increase in screen time has influenced their mental as well as physical health. Another great challenge is that they need to develop self-motivation and time management skills.

EDUCATIONAL IMPLICATIONS

Educational Challenges: Prompt actions should be taken to optimise learning experiences at higher education. A multi –spiked policy is necessary in the education sector to manage the present critical situation. Need to develop a positive attitude among students through proper guidance and counselling so that they become able to choose alternative educational and occupational plans. It is required to make amendments in the methodology of teaching at higher level of education keeping in view the requirements of e-learning and virtual classroom. Teachers should adopt four C's approach i.e. concern, communication, consideration and consistency. Concern should be for learning and content, communication with students, consideration for being flexible and consistency in follow up. Such innovative approaches can help in engaging the students and also they will feel concerned. Students as well as teachers should be trained properly to handle the electronic gadgets, so that they don't feel uncomfortable while operating them for online learning. Internet connectivity issues should be taken into consideration and governments should urge various telecommunication companies to improve their network services in rural as well as urban areas. Mobile-based learning models should be given priority. For effective online learning, training should be given to the students in open educational-digital learning resources and Learning management system through webinars and special training sessions. Measures should be taken at the university level to improve the mental health of students and also policies should be framed in such a way that can alleviate the effect of this critical period on research work, projects, jobs, and career of the students.

Psychological Challenges: Recent studies have shown that during period of Covid-19 students at each level (schools and colleges) are facing psychological distress and immediate measures should be taken to reduce their distress. Parents and the teachers have to take some extra efforts for the well-being of the students. They have to indulge them in self-soothing activities so that they can get rid of the excessive screen time. There is need to perform such activities which can help to manage stress and improve resilience. Until the universities and colleges reopen students need to have targeted psychological intervention through various digital media, parents, teachers, and friends. The digital platforms which are used for online learning should be used for human interactions and discussion rather than just for academic purpose. So they can get an opportunity to let out their emotions. This may help in reducing the feeling of social alienation. University counsellors and psychologist should administer scales like behavioural and emotional screening systems on the students to monitor the change in the behaviour of students. Students should be encouraged to do light exercises at home and also to eat healthy diet to boost their immune system. Social fear related to Covid-19 need to be properly addressed. Students have to limit their media as scrolling and watching different channels and sites leads to more anxiousness. They should watch such videos and text which provide them comfort and social support. They should find new ways of expressing kindness,

patience and compassion. Need to address psychosocial challenges of the students before teaching. A fruitful interaction should be there between teachers, parents, universities or college authorities and students so that possible solutions for any kind of psychological and social problems can be sought. In the views of Mustafa (2020), "Create communities to ensure regular human interactions, enable social caring measures, and address possible psychosocial challenges that students may face when they are isolated." Universities should take initiatives like yoga and meditation sessions, online cultural and academic competitions (fine arts, debate, declamation, photography, etc.) to dig out the talent of the students and it will ultimately provide some sort of self-motivation to students and help to break the monotony of online learning and lessen the nervousness, anxiety and mental pressure of the students.

CONCLUSION

COVID-19 has immensely affected the education system in India. All the human and non-human resources related to education have suffered a lot in both positive and negative way. Positive impact of this pandemic in the field of education is that educational institutions have moved towards the blended mode and are using various digital platforms to provide education and to communicate with students. But on the other hand, such new modes have created so many challenges for the students. To address the challenges faced by students of higher education, an unprecedented level of communication and personalized outreach is required. Students should take this epidemic situation in a right manner because if their psychological pressure will increase their self-regulations will fail while the dynamics of the pandemic and its impacts continue to evolve, colleges and universities need to employ various approaches and strategies that can reduce the effects of this pandemic on higher education, and hopefully, soon the education sector will be back on track with the fruitful efforts of all the stakeholders.

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RELEVANCE OF E-LEARNING METHOD IN THE ENHANCEMENT OF TEACHING LEARNING PROCESS DURING COVID-19 SCENARIO: OPPORTUNITIES AND CHALLENGES

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ABSTRACT
The corona virus disease (Covid-19) outbreak has been affecting a large number of people and undermining their lives on the planet. The government of India are figuring out how to ensure that we are well prepared to face the challenges of Covid-19. One among these vital step is the lockdown to curb the rapid spread of this virus. The lockdown provoked by Covid-19 in March incited schools and universities to exercise through e-learning for teaching and learning activities. This technology is currently playing an important role in the educational sector. E-learning methods has become one of the most popular ways to learn at home in the contemporary time. This paper highlights the impact of e-learning, the different types of e-learning, and the significant role of e-learning during the Covid-19 crisis.
Keywords: Covid-19, e-learning, education, opportunities, challenges

INTRODUCTION

The e-learning education method is one of the learning processes that employs electronic advances to inspire educational programs outside of the traditional classroom setting. The progressions of various types of e-learning environment and different virtual platforms have been playing an immense role during this crucial pandemic time, therefore the utilization of e-learning consider as another significance method of teaching, features an unrolled a progressive improvements during the Covid-19 situation. Education is considered as backbone of any nation on the earth (Tamrakar and Mehta, 2011). As the rule out of pandemic time the governments are utilized to suspend the schools, colleges and other government organizations for here and there. Entire universes are battling the one among a sort and threatening virus called COVID-19. The governments of most nations have decided to lockdown and requested that student should remain at their homes due to the peril of this virus on human life. So the teachers in various nations have begun utilizing e-learning in showing the students during this period.

E-learning is the utilization of diverse kinds of technology, for example, text, pictures, sound, videos, data and correspondence advances to assist students in education. Technology is important in many fields, including business, medication, and education then forth. E-Learning is often characterized by the utilization of PC and web advancements to convey an expansive cluster which empowers learning and improves execution (Ghirardini, 2011).

The COVID-19 pandemic has inclined educational frameworks everywhere in the world, stimulating the impermanent terminations of faculties, schools, colleges and universities. Most governments around the globe preference to shut down the educational institutions, annoying to decline the spread of COVID-19. As of 12 January 2021, roughly 825 million students are influenced due to school terminations in light of the pandemic. As indicated by UNICEF, 23 nations are as of now executing terminations, and 40 are getting nearby terminations, it affecting about 47 percent of the world's student's population ("Impact of the COVID-19 Pandemic on Education - Wikipedia").

COVID-19 PANDEMIC: INDIAN SCENARIO

COVID-19, which is commonly referred to as Novel Corona Virus, is said to be a respiratory issue in people which has been proclaimed as a worldwide outbreak and pandemic within the first quarter of the year 2020 by the World Health Organization ("Coronavirus Disease (COVID-19)"). As indicated by the ongoing data in India as per (28th February, 2021), 164511 active cases, 10775169 have been discharged & 157051 deaths have been seen due to the ongoing COVID-19 pandemic and 14301266 people have been vaccinated. The greater part of the positive cases were found within the regions of Maharashtra, Tamil Nadu, Delhi, Gujarat, Uttar Pradesh, and

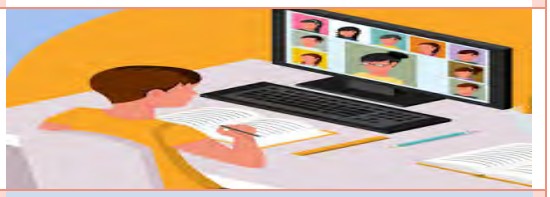
Rajasthan ("MoHFW | Home"). At present, a completely unique corona virus, the intense respiratory condition causing the Corona virus disease 2019 (COVID-19), has risen in late 2019, which has represented a worldwide wellbeing danger with its progressing pandemic in numerous nations and domains (Pradesh et al., 2020). The pandemic of the novel Corona virus (COVID-19) has fundamentally disrupted all aspects of human life. Because COVID-19 covers the entire globe, education officials are on high alert. The Covid-19 pandemic has forced schools and universities to close on the spur of the moment, wreaking havoc on the educational system.

E-LEARNING: CONCEPT AND DEFINITION

The internet has become one of the greatest elementary approaches for both teachers and students to exchange and secure data, as well as one of the most basic methods for evolving accessible resources for examination and learning (Richard and Haya 2009). Technology-based e-learning encompasses the use of the internet and other critical advancements to create learning materials and furthermore direct courses in an association (Fry, 2001). In certain definitions e-Learning includes something beyond the contribution of entirely on-line courses. According to (Oblinger and Hawkins, 2005), e-learning has advanced from a completely online course to using technology to deliver a portion or all of a course without requiring extensive time and effort.

TYPES OF E-LEARNING

E-learning is an innovative technology that has been used for teaching and learning process. Learning is frequently accomplished through websites, participation in online gatherings, chain email conversations, web-based life, or web-based preparation stages (Guragain, 2016). Essentially, PCs and the internet are required for the transfer of data and skills. Computer-based learning, electronic learning, virtual education opportunities and advanced cooperation, content delivery via the web, sound or video tape, CD ROM, and satellite television are all examples of e-learning applications. E-learning can be self-paced or instructor-led, and it can include images, text, movement, and gushing videos and sounds. Various shortened forms are utilized as equivalent to e-learning like, CBT (Computer-Based Education), WBT (Web-Based Education) and IBT (Internet-Based Education), (Algahtani, 2011).

Types	Concept	Visual Represents (Source-Google)
Blended learning	Separation learning or a mixture of both online and offline.	
Purely online	No up close and private gatherings.	
Synchronous	Teachers drive online courses through live webinars, internet messaging, video conferencing, and virtual classes.	
Asynchronous	Self-put learning strategies placed on the online system or capacity gadgets.	

Teacher-drove gathering	Separation is a setting in which students from various geographical areas can learn from a single educator.	
Self-study	Learning by visiting online journals, educational exercises or useful sites.	
Self-concentrate with subject matter	Learning by consistently visiting a couple of specialists' sites or modern locales.	
Web based	Acclimating just by turning upward on the web with the use of web indexes or web based life gatherings, such as: Facebook.	
Computer based	Taking information by going to the PC and examining materials from various storage devices such as CD ROM or USB.	
Video/sound tape	Learning by going to mixed media documents through YouTube or other video/sound sharing sites.	

TRADITIONAL LEARNING VS E-LEARNING: A COMPARATIVE OVERVIEW

Mode of teaching-learning	Traditional learning	E-learning
Classroom deliberations	The teacher usually quite the students.	The students discuss any event for the maximum time or quite the teacher.
Learning process	There is almost no gathering or individual examination because the education is directed with the entire class having an interest.	A significant percentage of the educational process is carried either in groups or by individual students via the internet.
Subject matter	The activity is directed by the teacher in accordance with the examination schedule and, as a result, the present educational plan.	The students choose the topic; consideration is based on a variety of sources of information, including web information banks and internet specialists found by the students.

Emphases in the learning process	Students understand "what" rather than "how" the kids, trapping educators in fulfilling the mandatory topic sharing: students are uninterested in request-based education and problem-solving, but teachers complete duties assigned by the educators.	Students are more aware of "how" than "what"; their education includes research, which includes locating and acquiring facts from online databases and specialists on correspondence work: Education is the subject that is most closely tied to today's world; it is more extravagant and remembers supplies for varied arrangements.
Motivation	Because the students' motivation is poor, they are uninterested in the content.	Inspiration is high due to the connection to issues that are more personal to them and the use of technology.
Teachers role	The teacher is the authority to controlling the classroom.	The teacher directs the students to the information.
Location of learning	The classroom, and consequently school, is where learning takes place.	There is no specific region where learning takes place.
Lesson structure	The framework of the activity, and hence the division of your time, is directed by the teacher.	Gathering the elements has an impact on the exercise's structure.

E-LEARNING EDUCATION METHOD DURING COVID-19 PANDEMIC

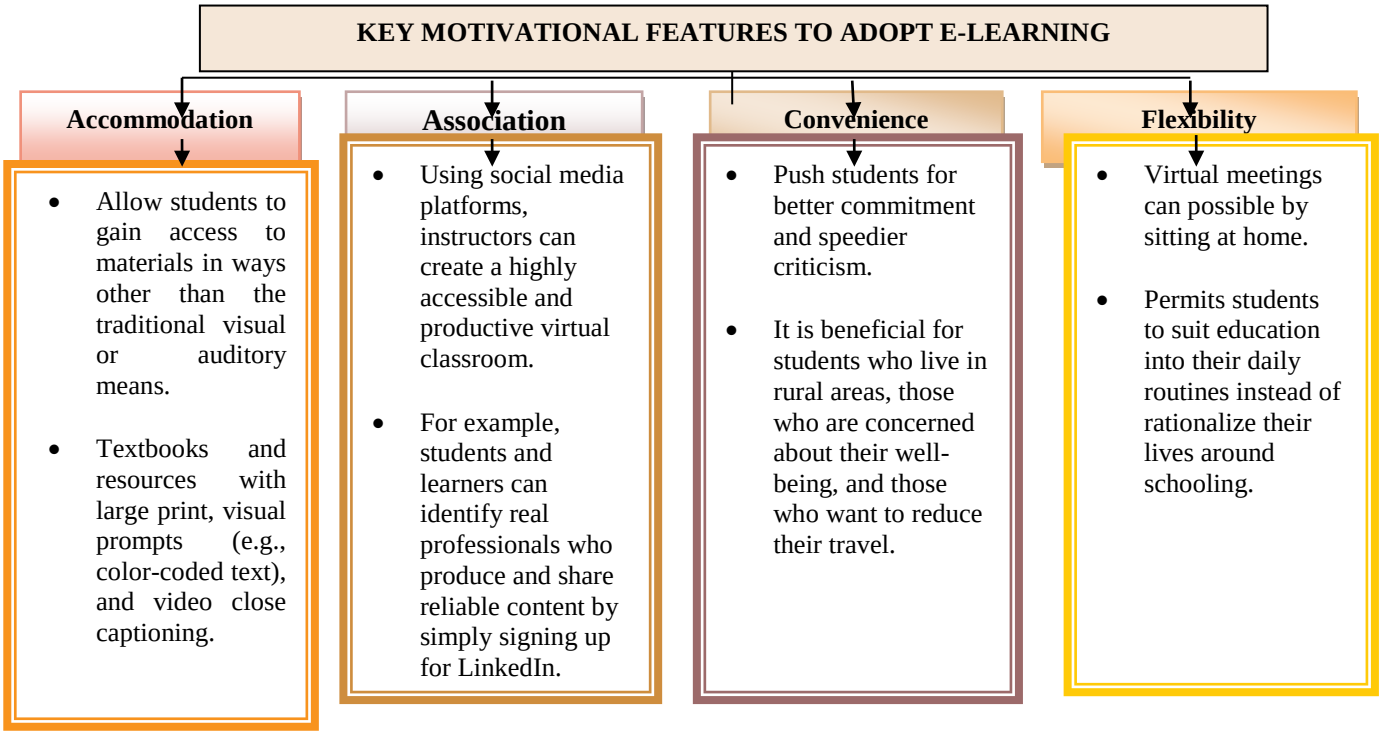
To support the decrease in the rapid spread of the corona virus, students from various portions of the planet, including India, began perusing and learning at home through numerous applications. Most students approach educational materials through live transmissions. New strategies for learning have been substituting traditional individual class room learning, from live communication to educational influencers (Alqurashi, 2019). In the context of this crisis, there is widespread concern among India's educational institutions about the safety of students and their educational issues. A large portion of the organization has shifted to online education using Skype calls, Zoom, Google Meet, and other virtual alternatives to reduce separation in education.

Without a question, this is a difficult time for students, as a result, the plan purpose is to lighten the strain on students and assist them in making the most of their time without sacrificing quality. Despite the fact that the student body is undergoing creative transformations during this Corona period but at the same time, there are also some depraved aspects on students; psychological well-being among students may be harmed by computer concerns (Maddux et. al, 2007). After the lockdown in India, the majority of schools and colleges reported students using e-learning applications for educational purposes, and teachers are utilizing various internet-based applications to present various materials to students (Manazir and Govind, 2020). This virtual learning stage has fundamentally reshaped and advanced how we instruct and attract our students in the midst of the COVID-19 pandemic for the requirements of social separation. Furthermore, it has allowed us to continue that our expectations can constrict learners' burn out and advance their wellbeing when separation has become a bit of a normal daily existence. Program-specific virtual learning stages can possibly play a big and valuable part in the learning of students (Almarzooq et al., 2020). E-learning has been a persuasive method in education for adapting, compared to the present pandemic period. E-learning could give more prominent teachers or self-study courses among students (Luaran et al., 2014). To place it plainly, e-learning is a mixture of technology for educating and learning to help with the pandemic. It also empowers the students to adapt adequately and the teachers to have the opportunity to play their roles and play out their tasks at the same time for a learning strategy to happen.

INDIAN VIRTUAL LEARNING ENVIRONMENT

- BYJU'S Classes
- Directory of Open Access Journals
- eGyanKosh
- E-Kalpa
- Enhanced learning (NPTEL)
- FOSSEE
- National Programme on Technology
- National Digital Library
- NCERT Test books

- Spoken Tutorial
- SWAYAM online courses
- SWAYAMPRABHA



E-LEARNING EDUCATION METHOD: OPPORTUNITIES AND CHALLENGES

E-learning is a knowledge storage facility that provides amazing information. The world is becoming more computerized, and an increasing number of schools are attempting to expand the use of e-learning method in education ("Benefits of Online Learning, Advantages of Online Learning, 2020"). Despite the fact that the use of technology in the field of education has changed the way things are done during this pandemic, there are still a few drawbacks to relying entirely on technology, which are outlined below:

E-learning: Its opportunities for Students

E-learning has numerous points of interest, with the blend of an efficient e-learning framework and a profoundly energetic student, one can make extraordinary progress during a brief timeframe. Some of the major e-learning points are listed below ("Advantages of e-learning for students' e-learning industry, 2020").

Enhance student-to-student and faculty-to-student communication	E-learning education gives numerous approaches to create correspondence between individuals and teachers, containing conversation sheets, chat and e-mail.
Availability to course materials	Learning apparatus that is accessible every minute of each day and makes it feasible for students to prepare without a limitation on their assets.
Suit diverse learning styles	An educator can introduce these materials in numerous arrangements to suit various sorts of learning styles. As an example, if a teacher puts both talking notes and slides on the internet, both visual and sound-related help students who want to consider "listening" and "watching".

Cost effective	For many students, e-learning is a cost-effective method of learning because they can browse a wide range of courses and choose one that meets their needs.
Work from anywhere	E-learning is almost certainly an extremely beneficial tool for almost all students. It's a phenomenon where students can search for any kind of data by sitting in a seat in their workplace.
More opportunity to think before sharing	This will prompt more prominent confidence and increasingly rich conversations. There is no limitation with reference to what hours to settle on a selected day for a topic. Nevertheless, it gives students the ability to choose their own hours.

E-learning: Its Challenges for the Students

Technology applies both incredible accommodation to human's creation, life and education so far but, if e-learning is taken into consideration, the following negative impact will occur ("E-Learning Pros and Cons, 2020"). Some major drawbacks, which are listed below ("Advantages and drawbacks of Rapid ELearning, 2015").

Decrease of outer activity	Face-to-face relational contact is going to be supplanted by humans and PCs. The costly interaction between humans and computers will reduce the likelihood of students' external exercises and reduce students' practical time.
"Lost in internet"	Information loss not only diverts learners' attention but also wastes their time, resulting in ineffective teaching. There is a wealth of beneficial knowledge, but due to information loss, most of it has negative impact on the network, leaving some students aimless. The following information and activities are presented in a blind format.
Technology dependence	Learning how to use applications may take a long time for some students. Other factors, such as a slow Internet connection or machine malfunctions, can make learning time-consuming and frustrating.
Social confinement	Students may feel socially disengaged now and again due to the absence of students around them while learning. Learning through a PC takes into consideration more extensive access, but it can likewise effectively prompt disengagement.
Costs the executives	Purchasing PCs, Computers, and Smartphones might not generally be simple for everyone. Additionally the expense of making preparing materials is high contrasted with the traditional strategies

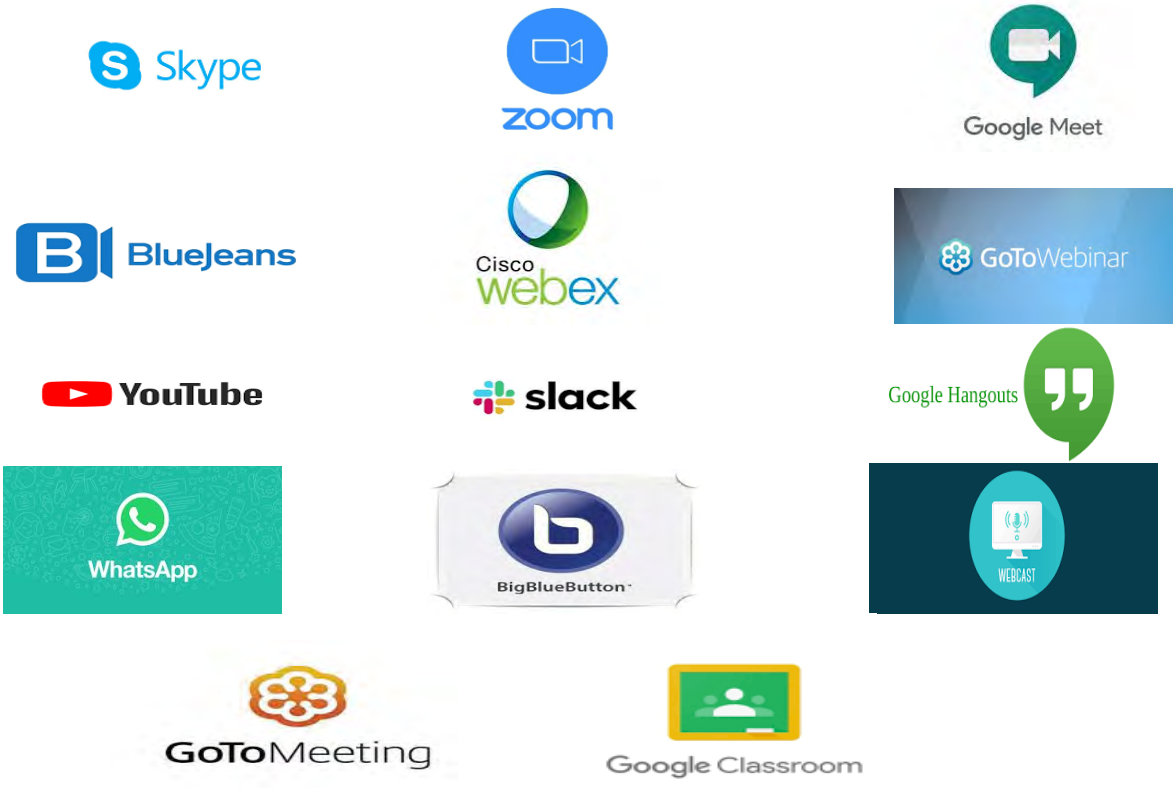
Harm to vision	The retina, which is delivered by the eye, is elicited by blue light and causes different synthetic responses. These responses inside the attention are often noxious to the photoreceptor cell atoms delivering them harmed.
Downside for disability students	During the COVID-19 lockdown, lessons using Zoom or other video conferencing platforms may be the newest thing, but many disabled students find it is difficult to attend classes without a computer and internet connection.

E-LEARNING EDUCATION SYSTEM: A CRITICAL OUTLOOK

The study of virtual technology is merely a part of human practice, and cannot be replaced by the effect of real practice in relying on nature, objects, and students to reach free and greater subjectivity. Even when interacting online, communication based on sentiments differs from communication based on rationality in real life (James, 2002). Following are also some major critics of e-learning education method:

- No authority over the students or classroom
- There is no authority over the educational environment or climate.
- A virtual classroom necessitates the use of PCs and the internet, which are unlikely to be available to everyone
- Expensive; enlisting into online live class or courses are often exorbitant
- Technical challenge (network, programming adaptation, gadget design)
- Safety and security (virtual students are frequently presented to the imperfections of the online. They are dependent upon unseemly sites and advertisements, online predators and programmers. Their security is in peril also).

KEY PLATFORMS FOR VIRTUAL LEARNING



CONCLUSION

Staying at home is one among the crucial means of slowing down the rapidly spreading of COVID-19. As a result, all schools, colleges, and universities in India and other countries have been closed. Technology has become an integral part of our daily life, with the help of e-learning methods, and applications such as Zoom, Google Meet, Google class room, and others, e-learning is being extensively used in the teaching and learning process, allowing students to study at home during the COVID-19 pandemic. The adaptability, accessibility, collaboration, and adaptability of learning motivate students to practice e-learning method. E-learning has become very conventional among students around the world, especially in the lockdown phase due to the COVID-19 pandemic.

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THE PERCEPTION OF STUDENTS REGARDING ONLINE TEACHING DURING PANDEMIC COVID-19 LOCKDOWN

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ABSTRACT
COVID-19 has made a huge global impact on the economy and education is one such field that is the most affected one as students all over the world are losing their valuable time during the lockdown. Due to COVID-19 schools and colleges are shut all across the world. However Online teaching by various e techniques and methods have emerged as the go-to solution for schools, colleges, and universities but still, the success of such online teaching entirely depends upon the perception of students and also their understanding level. In this paper, we have tried to attempt to analyze the extent to which students are satisfied with the online teaching provided by their teachers by various means such as zoom classes, Google classroom, Socratives, Talent LMS , live storm etc. To study the perception of the students data was collected through the convenient sampling of 280 students from Punjab. The result indicates that most of the student accept the online education during the COVID-19 but response is not very much positive which show that students are not considering online education as an alternative to offline regular education. ANOVA was applied to test the difference in perceptions. It was concluded that male and female students carry the same viewpoint. Most UG and PG students have a difference in opinion regarding online education. Perception does not vary based on the course of study. In a different location, the student carries different perceptions regarding online studies.
Keywords: Online teaching, Perception, internet, COVID-19

INTRODUCTION

Online education can be provided by teachers in several ways. The easiest way is by the use of recorded classes at home and the second one is with the use of live online classes which are conducted through webinars or zoom sessions. Along with this, there are various e-techniques that are also available to teach online but such online teaching requires high-speed internet connection, use of computers, laptops and mobiles by the teachers. At the same time, To attend online sessions or watch pre-recorded lessons, students will require high-speed internet and computers/mobile devices. Online teaching is an innovative method which allows teachers to reach out to a big number of students from all across the world and is considered useful for distance learning but at the same time online teaching requires time and practice and there is no face to face connection with the students. On the other side students are in a position to utilize their time during this pandemic covid-19 but they also face technological difficulties such as access and availability of internet connection along with family distractions.

Many of the platforms for online education have also been created which have got support from the Ministry of Human Resource Development (MHRD), the National Council of Educational Research and Training (NCERT), and the department of technical education. There also are various platforms like e-PG Pathshala which provides e-content, SWAYAM portal which is a digital platform for online courses for teachers, and NEAT enhancing employability. All these initiatives are also being used by the teachers for teaching online during this pandemic covid-19.

OBJECTIVES OF STUDY

1. To examine the perception of students on online education during COVID 19
2. To study the perception of students based on gender, Degree of Study, Course of study, and Location of students.

REVIEW OF LITERATURE

Various Comparative researches on online education versus face-to-face education have taken place since the 1920s. The results drawn of almost all the studies over the decades have been consistent and that major finding is that “There are no substantial differences in learning results between students who receive face-to-face instruction

and those who receive online instruction.". But after the year 2000 various studies were conducted which began to find that there exist significant differences in online education versus face-to-face education.

Literature indicates that student's technical skills and capabilities regarding the use of computers and the Internet connection and facility (Peng, Tsai, & Wu, 2006), their perceptions regarding the use of the internet, and attitudes towards the usage of the Internet (Tsai & Lin, 2004), their cultural and non-English backgrounds (Luyt, 2013), and along with that their time management skills (Hill, 2002; Roper, 2007) are the important factors that affect the effectiveness of online teaching.

O'Connell (2014) analyzed that the Academicians who grasp the value of education in both the local and global environment are needed for digital learning. Those academicians or practitioners must be willing to explore and use the new technology.

Rienties and Kinchin (2014) analyzed that there are numerous ways by which digital learning can be made effective such as social interactions through the forum, Twitter, Adobe Connect, and Google Hangouts. Through a variety of interactive learning experiences, the use of all such social platforms enables a deeper grasp of the topics at hand.

Rafizah Daud, Zarulrizam Ab. Jalil, M. Noor Fathoni M. Gunawan, 2015 in their paper on " Community college student's perception towards digital learning in Malaysia" published in Elsevier analyzed that students generally have a high level of interest in digital learning because it acts as a motivator for them that their teachers are using digital platforms to teach. They emphasized the usage of digital learning in all the colleges and universities for the students and for that purpose they recommended that the authorities should provide proper infrastructure facilities for the same.

Sun, A.2016, & Chen, X. (2016) tried to explore the relationships between community and student success in online learning. The research involved undergraduate students enrolled in online courses from a reputable and accredited university in the United States. The study found a substantial link between learner connection, engagement, and a sense of community, as well as achievement in online learning.

Kebritchi, Lipschuetz, and Santiague (2017) in their research analysed that Higher education institutions play a vital role in enhancing the quality of online education because they have to provide support for teachers, students, and content development. Online education is a versatile environment where three major components of teachers, students, and content continuously affect each other and at the same time back up and support from the institution greatly influences the three components. Higher education institutions play a central role in enhancing the quality of online education by providing support for instructors, learners, and content development. Online education is a dynamic environment whose three major components of instruction, learner, and content continuously affect each other while institution support also greatly influences the three components.

Sarah Guri-Rosenblit(2018), conducted research to find out the prerequisites of E-learning paper and suggested that the lack of digital literacy and less awareness regarding the use of the internet properly is a problem which is faced today by both students and teachers(Alexander et al., 2017; Wineburg et al., 2016) The roles of teachers are very different in an online environment from their traditional roles in a classroom setting (Alexander et al., 2017). Most of the teachers and professors do not possess nowadays a sufficient digital literacy and are not in a position to utilize the technology well. (Andrade, 2015; Benson & Brack, 2009; Educational Testing Service, 2009; Guri-Rosenblit & Gros, 2011).

Basilaia et al. (2020) conducted a study in Georgia schools and inferred that transition from offline education to online education was implemented successfully. Adnan and Anwar (2020) concluded that online study during Covid-19 is not able to produce desired results in developing countries like Pakistan. Mulyanti (2020) indicated in their study that online education is not interesting. Tria (2020) concluded that online education is new normal during covid -19. Mulenga et al (2020) confirmed that covid-19 is a gateway for online studies. Putra (2020) raised the concern of lack of resources for online education during covid-19. However, there is a lot of change in students and teacher's behaviour during this COVID-19. Even those students who have not even taken any of the classes online ever and were always busy using social networking sites such as WhatsApp and Facebook, are trying to learn new methodologies of study. In this case, even teachers are having the same scenario. Those teachers who haven't used any method of teaching except chalk and duster are trying to teach by learning different e- techniques and therefore, this research is going to give results out of the box because of differences in situations and perhaps the results drawn earlier in various researches will not be applicable here.

THE STUDY

Data collection method: Both primary and secondary data is collected for the above-mentioned study.
Sample size*:* The sample size is 280 students doing either graduation or post-graduation across Punjab. They are from age group 17-24 and they belong to different colleges and universities spread over Punjab. Data was collected in the first and second weeks of May 2020.
Sampling technique: convenience sampling has been used for this study.
Research technique: Mean and the standard deviation is used for data analysis. ANOVA is used to find out the difference of perception based on gender, based on UG and PG courses, based on a course of study, and based on the location of students.

Data Profile

The whole sample is divided on the basis of gender, degree of study, course of study and location.

Table 1a: Classification of students on the basis of gender

S. No.	Gender	No. of students
1	Male Student	89
2	Female Student	191
	Total	280

The sample includes 89 male and 191 female students on the basis of gender.

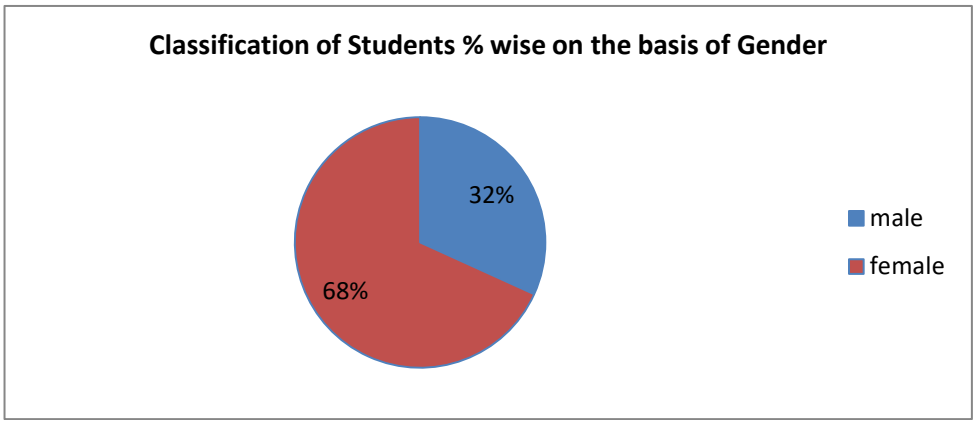

Figure: 1a

Table 1b: Classification of students on the basis of degree of study

S. No.	Degree of Study	No.of students
1	Post Graduate	75
2	Under Graduate	205
	Total	280

The sample includes 75 post graduation students and 205 students doing graduation on the basis of degree of study.

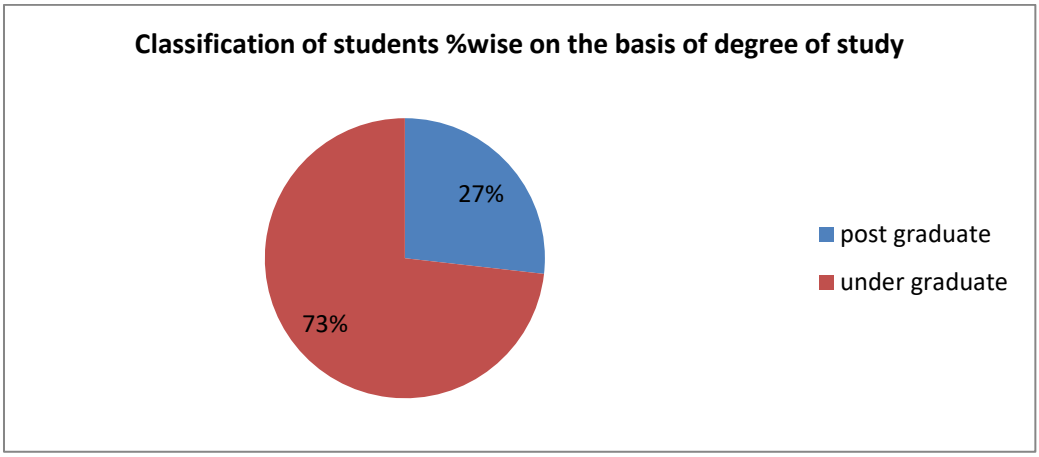

Figure: 1b

Table 1c: Classification of students on the basis of course of study

S. No.	Course of study	No.of students
1	Business Studies	202
2	Arts	9
3	Computer application	34
4	Engineering	10
5	Science	10
6	Vocational	8
7	Law	7
	Total	280

The sample includes 202 students belonging to business studies, 9 belonging to arts, 34 belonging to computer applications, 10 of engineering and science, 8 students of vocational courses, and 7 students of law stream based on course of study.

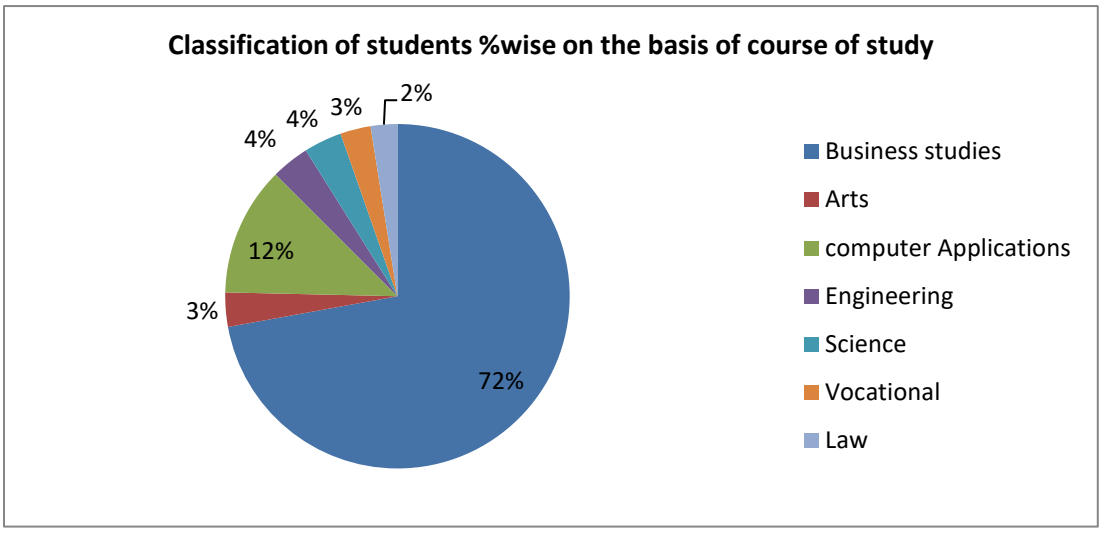

Figure: 1c

Table 1d: Classification of students on the basis of location

S. No.	Location	No.of students
1	Amritsar	18
2	Chandigarh	18
3	Ludhiana	137
4	Hoshiarpur	73
5	Jalandhar	20
6	Mukatsar	14
	Total	280

The sample of 280 students also has been divided based on location as 18 from Amritsar, 18 from Chandigarh,137 from Ludhiana, 73 from Hoshiarpur, 20 from Jalandhar, and 14 from Mukatsar.

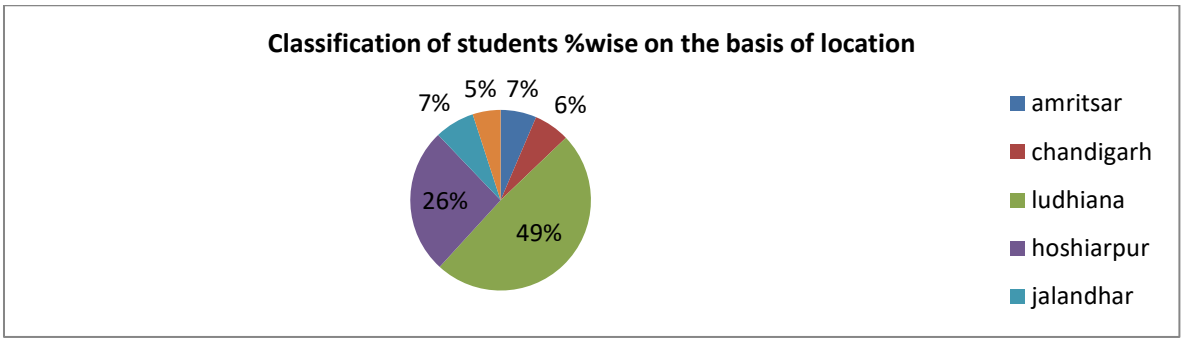

Figure: 1d

Table 2: Perception of students

No.	Perception of Students	Mean	Standard Deviation
1	Online education is suitable in covid-19	3.54	1.269
2	Students are always interested in the online sessions	3.00	1.276
3	Students are in a position to complete their syllabus on time in online education.	3.07	1.375
4	Students can easily manage their time according to their convenience in online education	3.31	1.312
5	Even the irregular students of college are interested in online education	3.14	1.328
6	Students have more sources to explore for education in case of online education	3.36	1.243
7	ZOOM app is a nice platform for the teachers and students to interact personally	3.20	1.446
8	Google classroom is a nice app for online education as per suitability of time.	3.46	1.269
9	Students can get immediate feedback in case of online education	3.39	1.320
10	Students feel more personally connected to their teachers in online education	3.22	1.460
11	Students get a mental relief when their queries are solved in online education	3.28	1.237
12	Queries are easily solved in case of online education	3.12	1.368

The above table shows the results of perceptions of the student. The average score is above 3. So the students perception does not carry a negative opinion about online education during the covid period. The student's view is from neutral to agree with side. Students understand the need for online education during the covid period but do not accept it as an alternative to regular offline education.

Table 3: Difference in Perception of students on the basis of gender and Degree of the study

No.	Perception of Students	Gender	Degree of Study
1	Online education is suitable in covid-19	2.631(.106)	1.511(.220)
2	Students are always interested in the online sessions	1.226(.269)	9.027 (.003)
3	Students are in a position to complete their syllabus on time in online education.	4.537(.034)	3.279(.071)
4	Students can easily manage their time according to their convenience in online education	.560 (.455)	8.334(.004)
5	Even the irregular students of college are interested in online education	4.456(.036)	7.874(.005)
6	Students have more sources to explore for education in case of online education	1.928 (.166)	6.178(.014)
7	ZOOM app is a nice platform for the teachers and students to interact personally	2.319 (.129)	9.619 (.002)
8	Google classroom is a nice app for online education as per suitability of time.	5.344 (.022)	4.002 (.046)
9	Students can get immediate feedback in case of online education	.268(.605)	9.085 (.003)
10	Students feel more personally connected to their teachers in online education	4.142(.043)	8.498 (.004)s
11	Students get a mental relief when their queries are solved in online education	2.153(.143)	6.330 (.012)
12	Queries are easily solved in case of online education	1.683(.196)	7.198 (.008)

H0: No difference in perception regarding online education between male and female students. In most of the perceptions under the above case null hypothesis is accepted as the value is above 5% significance level. The result in perceptions 3,5,8 and 10 was different where the alternate hypothesis was accepted and the difference concerning gender was witnessed as value is below 5% significance level.

Second H0: No difference exists between undergraduate and post-graduate students regarding their perception of

online education during the Covid pandemic. In most of the perceptions, the alternate hypothesis is accepted and a difference in opinion was noticed among UG and PG students. In perception, 1st and 3rd null hypothesis is accepted and there is no difference in opinion of UG and PG students at 5% significance level.

Table 4:Difference in Perception of students on the basis of Course of study and Location of student

No.	Perception of Students	Course of Study	Location
1	Online education is suitable in covid-19	1.207 (.303)	2.154 (.059)
2	Students are always interested in the online sessions	1.697 (.122)	4.029 (.002)
3	Students are in a position to complete their syllabus on time in online education.	1.576 (.154)	9.798 (.000)
4	Students can easily manage their time according to their convenience in online education	1.480 (.185)	6.049 (.000)
5	Even the irregular students of college are interested in online education	2.056 (.059)	5.552 (.000)
6	Students have more sources to explore for education in case of online education	.408 (.873)	3.273 (.007)
7	ZOOM app is a nice platform for the teachers and students to interact personally	1.995 (.067)	4.571 (.001)
8	Google classroom is a nice app for online education as per suitability of time.	1.299 (.258)	1.356 (.241)
9	Students can get immediate feedback in case of online education	1.947 (.074)	3.245 (.007)
10	Students feel more personally connected to their teachers in online education	1.918 (.078)	6.240 (.000)
11	Students get a mental relief when their queries are solved in online education	1.803 (.099)	6.675 (.000)
12	Queries are easily solved in case of online education	1.783 (.103)	6.489 (.000)

The third null hypothesis that student perception does not differ across the course of study. In all the perceptions the null hypothesis is accepted at a 5% significance level.

The fourth hypothesis that student perception does not differ according to the location of the student. In almost all the cases H0 is rejected and the alternate hypothesis that student perception differs according to the location of a student at a 5% significance level. The result differs in perception1 and perception 8 where the null hypothesis is accepted at a 5% significance level.

CONCLUSIONS

He survey was conducted to study the perception of students regarding online education during the covid 19 pandemics. The study was carried during the lockdown 3 period. The result indicates that most of the student accept the online education during the covid but the response is not very much positive which show that student is not considering online education as an alternative to offline regular education. ANOVA was applied to test the difference in perceptions. It was concluded that male and female students carry the same viewpoint. Most UG and PG students have a difference in opinion regarding online education. Almost in all the course of study null hypothesis is accepted and the opinion of the student is the same across the course of study. In a different location, the student carries different perceptions regarding online studies. The significance of the study is that while implementing online education different strategies, should be used as UG and PG students carry different perceptions. The location-wise difference was also witnessed so different strategies should be used in different locations to promote online education. The study has the limitation that convenience sampling is used in a limited area of Punjab. Online teaching creates a lot of opportunities but along with that, there are some potential drawbacks that students want the colleges, teachers, and universities to consider. The most essential advantage is that students have a lot of options, but more options mean more variance in the quality of teaching methods, online resources, and student support.

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