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Editor,
Prof. Dr. Aytekin İŞMAN
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A STUDY ON SOCIAL BENEFITS OF ODL LEARNERS WITH SPECIAL REFERENCE TO VIDYASAGAR UNIVERSITY, WEST BENGAL

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ABSTRACT
Education has social benefits. It provides societal advantages in that it efficiently trains people to take on work in a variety of contexts. High levels of knowledge and skills associated with greater education translate into higher-quality social output and, as a result, higher social status. Education is a worthwhile endeavor that has significant effects on both individuals and civilizations. This paper examines the social benefits of ODL learners of Vidyasagar University in the state of West Bengal. The study is based on a descriptive survey and the survey conducted on pass out ODL learners of Vidyasagar University. The study explores ODL learners' social benefits including educational access, health, mental satisfaction, decision making, community participation. We see the result of positive social benefit of male and female ODL learners of Vidyasagar University. Rural ODL learners' enjoying more social respect than urban learners. Result shows overall female learners' dominance of their social benefits in comparison to rural, urban and male learners.
Keywords: Education, social benefits, Development, Growth, ODL

Introduction

Human progress is intended by education, which is a fundamental human right. Additionally, it is anticipated to advance culture, rational thought and civic sensibility in a person. It is assumed that educated people will be better able to handle the obstacles of life. Through education people anticipated benefits include improved productivity, helpful engagement in social activities and processes, harmony in interpersonal relationships, sustainable development, and fair social order. Education promotes social growth among individuals and communities. Education has moral and cultural aspects which help people in their social development. Equal access to education creates healthy opportunities for social life for the people.

The education system is an input for social growth and development. Education helps in social growth and development of a country (Patil, 2012). Human society is a combination of monetary and non-monetary factors. Education has multifaceted impacts on society and its people. It induces sustainable growth and development by reducing poverty and creating social equality with prosperity (Afzal et al, 2010). To develop skills, knowledge and capabilities among individuals' access to education is very much important. Higher education provides more power towards social development with the betterment of individuals. Through accessing higher education learners of West Bengal making continuous efforts towards sustainable development in all the spheres of the society. For these reasons the government focused on arranging more institutions for providing higher education for the betterment of the people and society.

From independence Indian literacy rate and students' enrolment has increased. In the last few years educational infrastructure has improved more. Students opting higher education for betterment. Due to student enrollment pressure new educational institutions are established accordingly. Government gives efforts towards providing higher education at mass level. Distance mode education came with conventional mode to meet educational demand. Slowly regional disparities were removed and equality established among the people throughout the country for its educational achievement. West Bengal started Open and distance learning in its conventional universities through distance mode after developing the Directorate of Distance Education (DDE) among their own universities in 1994. This happened when A study center was established by the Indira Gandhi National Open University in Kolkata, and later a Regional Centre at Bikash Bhaban in Salt Lake. Vidyasagar University, a state institution established by the Act created in 1981 with the motto "Education, Knowledge, Progress" and with a goal of meeting regional, ethnic, socio-cultural, and geographic needs in addition to those of mainstream education (Vidyasagar University, n.d). Vidyasagar University ODL mode provides higher education to all the persons of all ages and gender who do not undergo the higher courses as regular full-time students. The university offers a chance to innovate and reinvent the creative brains. Vidyasagar University is a location where generations of students and teachers can share their knowledge, both ancient and modern, as well as the skill of analyzing it, for the benefit of local and global human social existence.

Review of literature

It is often believed that those with greater levels of education have healthier lives because they are more conscious than those with less knowledge. There is strong evidence that the hundreds of billions of dollars spent on education annually in developing nations are not being used effectively. A more efficient use of these funds might accelerate the buildup of human capital, raising incomes and, more broadly, the standard of living and social standing of the population (Glewwe, 2002). There is a relation between social context and healthy life. Poor income, lack of balanced diet, unplanning accommodation, unconsciousness about health and unhealthiness puerility   is the cause of many diseases. (WHO 2004). Many studies show that people from different socioeconomic categories have varying degrees of health, and that the causes of these illnesses need to be determined (Wilkinson and Marmot, 2003). Education disparities have been identified and proven to have a significant impact on health status over a lengthy period of time. Research proved that there is a link between health and education (Grossman,1972). Higher educated people more careful about their health (Silles, 2009). Socioeconomic disparity has been found in larger societies due to non-access of higher education (Abu-Saad, 2004). Cultural dynamics and social standards are also influence by higher education (Borralho et al., 2015). Distance learning is a multifaceted technique that involves not only students but also other workers, laborers, farmers, and stay-at-home moms who can access education according their space and time. Open Distance Learning has great impact on our society (Murray et al., 2013). In a nation ODL can remove the demographic disparities, poverty and many other socio-cultural and economic constraints. ODL is a blessing in modern education system. There are numerous social barriers of higher education, such as marriage and family. ODL has brought education to the doorstep of those students (Wadi & Sonia, 2002). Youth from remote and rural locations, especially women, now have access to an alternate kind of education. They thanks to open distance learning. It aids in expanding the range of opportunities and resources available in remote places to youngsters and women. (Munawar & Akhtar, 2017).

Significance of the study

The social development of individuals is significantly influenced by higher education (Sun,2012). It has an impact on the standard of living of individuals. Higher education reform initiatives are now of utmost significance to social life. Higher education institutions are frequently acknowledged as businesses that play a significant role in the socioeconomic dynamics. One of the important social markers that affects an individual's success and community development is higher education. People who pursue higher education benefit from societal advancement for a better quality of life in the future. To behave effectively in their surroundings, people and their community must be developed through social development. Additionally, social integration is one of the key measures of how far society has come in terms of social development. By doing this, higher educational institutions will improve the social infrastructure that aids students in finding a position that suits them, facilitating simple access, enhancing social status, mental satisfaction, correcting their social notions, and ultimately facilitating their overall development. Centre for Distance and Online Education (CDOE) of Vidyasagar University come under the higher education system of West Bengal state and provides better knowledge and skills to the learners for   their upcoming future. So, it is very much necessary to see what types of social benefits did they received after completion their course.

Objectives

The objectives of the present study are as follows: --
1. To study the social benefits of ODL Learners of Vidyasagar University.
2. To examine the social benefits of male and female ODL learners in urban and rural areas of Vidyasagar University.
3. To compare the social benefits among the male and female ODL learners of Vidyasagar University.

Hypothesis

$^0H_1$. There exist no significant differences of Social benefits of ODL learners with in female and male learners of Vidyasagar University.
$^0H_2$. There exist no significant differences of social benefits of ODL learners in urban and rural areas of Vidyasagar University.
$^0H_3$. There exist no significant differences of social benefits among rural male and rural female ODL learners of Vidyasagar University.

Delimitation of the study

The study is restricting to Centre for Distance and Online Education (CDOE) Vidyasagar University in the state of West Bengal with the background of higher education system only within the completion of post graduate degree in the subjects of English in the academic year 2015 and 2016.

Data source and methodology
Data for the current investigation were gathered from the Centre for Distance and Online Education (CDOE), Vidyasagar University in the state of West Bengal. Present study is followed by the quantitative approach with the help of descriptive survey method in nature. The data were collected through questionnaire which has been standardized through test-retest method of reliability and this value estimated as r = .71

Sample: 100 ODL Learners of Vidyasagar University comprising of 50 male and 50 female having the subject of English in Master's degree level are residing at either urban or rural areas have been considered for the study.

Data Analysis and findings
The description of data interpretation of the current study is described below according to the objectives and hypothesis.

Table -1: Demographic Profile of Sample

Measures	Gender		Locality	
	Male	**Female**	**Rural**	**Urban**
N	50	50	60	40
Percentage %	50	50	60	40
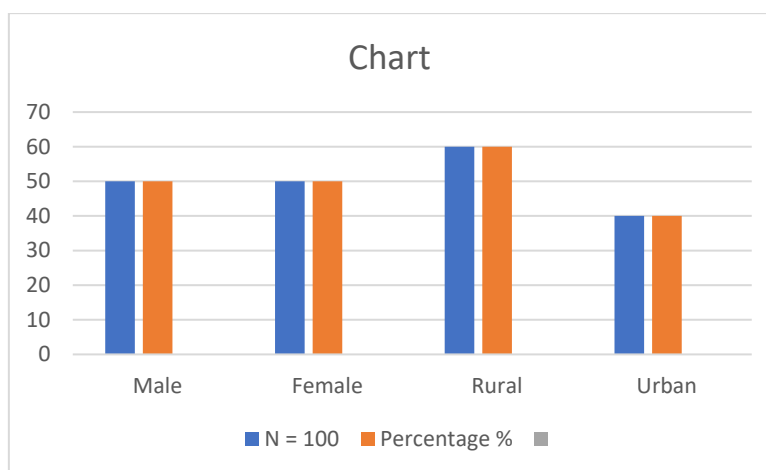
Fig-1: Percentage of ODL Learners with respect to Gender and Locality

Table - 1:
(As per Gender) shows that total numbers of ODL learners are 100 where male and female learners are equal 50.

(As per Locality) shows that total respondents (100) are divided into two groups like rural and urban respectively. The numbers of ODL learners residing at urban areas are 40 and ODL learners residing at rural areas are 60.

Table- 2: Social Benefits of Male and Female ODL learners of VU

Variables	Male		Female		df	t-value	Critical Value of t	Decision	Conclusion
	Mean	**SD**	**Mean**	**SD**					
Social Benefits of ODL learners of Vidyasagar University (VU)	117.02	3.07	121.58	4.89	98	5.56	$t_{0.01}$ = 2.58	P < .01	Significant diff. exists Null Hypo. rejected

Table-2 describes that 't'-value of two set of data in gender variation of male and female ODL Learners of VU regarding the variable Social Benefit is 5.56. This, at a 0.01 level, is significant. As a result, the alternative hypothesis is accepted and the null hypothesis is rejected. Result indicates significant difference exists between male and female ODL Learners of VU related to Social Benefit. By considering the mean and sd value of both

gender regarding the variable it can be said that the level of Social Benefit of female ODL Learners of VU is much better than the level of Social Benefit of male ODL Learners of VU.

Table-3: Social Benefit of ODL Learners of VU Residing at Rural and Urban Areas

Variables	Rural		Urban		df	t-value	Critical Value of t	Decision	Conclusion
	Mean	SD	Mean	SD					
Social Benefits of ODL learners of Vidyasagar University (VU)	120.87	4.84	116.95	3.21	98	4.83	$t_{0.01}$ = 2.58	P < .01	Significant diff. exists Null Hypo. rejected

Table-3 depicts that 't'-value of two set of data in locality variation of VU ODL Learners residing at urban and rural areas regarding the variable Social Benefit is 4.83 which is significant at 0.01 level. So, null hypothesis is rejected and alternative hypothesis is accepted that means there exists significant difference between ODL Learners of VU residing at urban and rural areas related to Social Benefit. By considering the mean and sd value of both cases regarding the variable Social Benefit, it can be said that the level of Social Benefit of ODL Learners of VU residing at rural areas is higher than urban areas.

Table-4: Social Benefit of rural Male and rural Female ODL Learners of VU

Variables	Rural Male		Rural Female		df	t-value	Critical Value of t	Decision	Conclusion
	Mean	SD	Mean	SD					
Social Benefit of Female ODL Learners of Vidyasagar University (VU)	117.06	2.99	124.33	3.74	58	8.35	$t_{0.01}$ = 2.60	P < .01	Significant diff. exists Null Hypo. rejected

Table-4 indicates that 't'-value of two set of data in the rural Male and rural Female ODL
 Learners of VU regarding the variable Social Benefit is 8.35 which is significant at 0.01 level. So, Alternative hypothesis is accepted when null hypothesis is rejected, indicating that there is a big difference between male and Female ODL Learners of VU residing at rural areas related to Social Benefit. By considering the mean and sd value of both cases regarding the variable Social Benefit, it can be said that the level of Social Benefit of Female ODL Learners of VU residing at rural areas are higher than the male ODL learners of rural areas. Female learners are available much opportunities, social respect and status than male.

Conclusion

Through our study it notified that considerable social benefit differences exist of male and female ODL learners of Vidyasagar University (Table 2). Through our interpretation we see .01 significant levels which indicate Female ODL Learners enjoyed better level of Social Benefit than male ODL Learners of VU. From Table – 3, we see that rural male and female learner's dominant their social benefits regarding the urban male and female ODL learners. Hypothesis no two rejected due to rural male – female t- value 4.83 and significant level at .01 levels. Table three concludes the differences of social benefit of rural and urban residing learners. Table – 4 accept the alternate hypothesis while rejecting the null hypothesis. Consequently, there is a large difference (significant at .05level) of female ODL learners' social benefit with in comparison of male ODL learners of Vidyasagar University according to their t- value, mean and standard vitiation differences. We overall concluded that female ODL learners are enjoying more social benefit, social importance and social status than male ODL learners of Vidyasagar University.

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ACADEMIC PROCRASTINATION AND SELF-EFFICACY AMONG ADOLESCENT STUDENTS: A CORRELATIONAL STUDY

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ABSTRACT
The present study was undertaken to study the Academic procrastination level of adolescent students of Kashmir valley in relation to their Self-efficacy. The researcher had selected 200 adolescent students from district Anantnag. Stratified random sampling technique was employed to select samples. Self constructed scale of academic procrastination (2022) and self-efficacy scale developed by Arun Kumar Singh and Shruti Narain (2014) were used to measure academic procrastination and self-efficacy respectively. Pearson's product moment of correlation were used to determine the relationship between the two variables. To find out the significance of the mean difference between demographic variables, 't' test a statistical technique were also adopted . The findings of the study revealed that academic procrastination is inversely proportional to self-efficacy, which means that, more will be Academic procrastination, the less will be the self-efficacy or vice versa It was also found that there is a significant difference in the academic procrastination and self-efficacy of adolescent boys and girls.
Keywords: Academic procrastination, Self-efficacy, Adolescent , Correlation

Introduction
Adolescence is the stage where maximum growth takes place especially intellectual development reaches at its peak. But in this cutthroat, dynamic world students are disposed to innumerous distractions. These distractions result in Academic procrastination, where a student frequently procrastinates till the last moment. It can be defined as a tendency of a student to deliberately delay or postpone the academic tasks until the last moment. Ac when a student delays work related to academic tasks, academic procrastination occurs (Solomon and Rothblum,1984). Students who delay academic tasks are said to engage in procrastinating academically due to the lack of drive, concern of failing, low self-efficacy ,laziness ,task aversion, physical or mental exhaustion. It has been observed that procrastination occurs frequently in academic contexts, especially the college students. According to estimates, between 50% to 95% college students regularly delay their academic work (Steel and Ferrari, 2013).

Causes of Academic procrastination

Lack of self- efficacy building

Ineffective Time management

Fear of failure

Task Aversion

Lack of Motivation

Fear of criticism

Depression

Low self confidence

Perfectionism

Sincerity

Procrastination has received many empirical attention especially within the field of psychology. As per research, procrastination is typically associated with behavioral issues like deficiencies in self-regulation, poor motivation, issues with time management, disarray, and external locus of control (Ackerman and Gross,2005). Lack of motivation is mostly blamed for procrastination especially when the task is unpleasant and less exciting (Ozer, Demir and Ferrari 2009). Academic procrastination arises when problems like angst and carping exceed a student's self control and desire. There are various internal and external causes of procrastination. Internal causes are, anxiety of failing, Perfectionism, depression, Task avoidance, feeling overwhelmed, and physical or mental exhaustion. External causes are Poor study environment, unpleasant assignments, lack of clear directions or expectations, lack of communication, harsh approach and too flexible on the part of teachers.

Effects of Procrastination on Students
Procrastination is connected to a number of academic problems for students, including poorer exam results, lower grades, having to repeat assignments, an increase in course failures and withdrawals ,longer study times, and a higher chances of dropping out. These problems are related to the fact that students commonly indicate that procrastination takes up more than a third of their regular tasks, typically in the form of activities like napping, watching , or playing video games. Negative feelings like guilt, humiliation, and despair may also result from it,Therefore resulted in unpleasant emotional wellbeing.

Ways to Avoid Academic Procrastination
Make the project meaningful to the students: In order to motivate students to begin a project, teachers should make it interesting and pertinent for them. They should also assist them tie the project to their interests.
Set deadlines: Teacher should set deadline for the students to understand when a task need to be completed.

Develop good study habits: By putting more emphasis on the learning process than just grades, teachers can assist students in developing better study abilities. The goal is to get a decent grade, and the child can achieve it by developing effective study habits.

Set clear goals: It might be challenging for many students to overcome procrastination- causing factors like fear of failure and perfectionism . to manage expectations and monitor progress, a student should be assisted by the teacher in setting specific , attainable goals

organize the project into manageable tasks: big projects may seem very large at first. Teacher should break down the project into manageable parts then, he or she is capable of completing the project.

Promote self-efficacy*: self-efficacy is the conviction that you can carry out the tasks required to accomplish your goals, can aid in preventing procrastination. So, In order to overcome the tendency of procrastination among students and to increase their academic performance, there is a need to improve self-efficacy as it makes the individual confident in their capacity to finish a task or achieve a goal.

Self-efficacy is the person's faith or assurance in their abilities to engage in the behaviors necessary to produce specific performance attainments. It is the conviction that one has power over their own environment, behavior, and motivation in social situations. Albert Bandura, (1994) defined self-efficacy as an individual's confidence in their capacity to plan and carry out the actions necessary to achieve a goal. It shows how people behave, feel, think, and get their motivation. They approach daunting events with the conviction that have control over them. Such a conviction results in personal success and reduce stress. Additionally, it is said to be a determination of an individual's aptitude. According to Zulkosky (2009), a person's self-efficacy will affect how motivated they are and how persistent they are in overcoming obstacles. An increase in dedication, effort , and tenacity in people as well as excellence in performance can be brought about through self-efficacy. Albert Bandura identified four key sources of self-efficacy: (1) Mastery experience, which is the most important source of knowledge about ones efficacy and provides concrete examples of accomplishment. According to Bandura, success leads to confidence, whereas every unsuccessful attempt does the opposite. The perceived effectiveness can be affected by a person's past experiences. (ii) Vicarious Experience- self-efficacy development is greatly aided by social role models like elder siblings or peers. (iii) Social persuasion- Encouragement and disapproval of a person's performance or ability to perform have a great impact on their self-efficacy. (iv) Emotional and psychological states- it is expected that those having high efficacy will see their level of affective arousal as a motivating factor in their ability to accomplish. The state of one's physical, emotional, and psychological health has an impact of how effectively they perceive themselves to be. (Lopez- Garrido, 2020).

Ways to develop Self-Efficacy among Adolescent students

1. **Celebrate success:** The development of self-efficacy depends critically on mastery experiences. The most effective technique to develop a strong sense of self-belief, according to Bandura, is to do this. Gaining success fosters a strong self-efficacy.
2. **Observe others:** Another crucial method of boosting self-efficacy, according to Bandura, is through vicarious experiences gained through peer modeling. Observing others working hard and achieving will boost one's confidence in his own capacity to succeed.
3. **Seek positive statements**: Receiving encouraging comments from teachers, coaches and experts can also increase sense of self-efficacy among adolescent students.
4. **Set achievable small goals:** Students frequently make the error of setting unrealistically high expectations, which leads to discouragement when those expectations are not met. Choose a more doable goal. The secret to success is taking little, deliberate moves.
5. **Get a Coach:** Having a coach by your side will encourage you to overcome the obstacles in your way and hold you responsible for taking action. You need someone to lift you up and lead you through the difficulties when you are feeling low on confidence .a coach will prevent you from giving up and keep you making forward.
6. **Awareness of Thoughts and Feelings:** You might not feel confident in your abilities to handle the task at hand if you start to feel stressed before a difficult occasion. To manage your thoughts and emotions, try to establish a new habit.
7. **Be positive**: In order to handle the stress and self-doubt, it is crucial to recognize their symptoms. If you want to keep your self-doubt at bay, you want to concentrate on your prior successes and rewarding encounters. When you require a quick boost to your self-efficacy, keeping a record of accomplishments that you are proud of may be useful.

Significance

- The following points highlight the importance of the current study. The current study is noteworthy since it is one of the few to specifically address the problem of academic procrastination and self-efficacy of adolescent student of Kashmir valley.
- This study throws light on academic procrastination , its occurrence, the association between academic procrastination and self-efficacy, and its beneficial effects on the education.
- The results of this work may also give parents, educators, and school teachers a clear picture of the scope and causes of this phenomena. This will help them comprehend it better and allow them to create preventative and healing measures that will minimize the procrastinating behavior whenever possible.
- This may help the teachers to identify the degree of academic procrastination and the level of self-efficacy among students by providing them tools to measure academic procrastination and self-efficacy.
- The importance of the study lies in the fact that it gives us clearer idea of how to conceptualize educational and training initiatives that aim to lower student's procrastination rates and raise their self-efficacy. These programmes can be created by specialists, academic counselors, and educators

Review of literature

Through review of related literature, the researcher becomes familiar with the information   already available concerning the study under investigation. It reduces the likelihood of repetition. It gives the researcher comfort

in knowing that the topic under investigation has precedents in published literature and demands more investigation. It gives the researcher in-depth background knowledge on the relationship between the variables and the findings of earlier studies that are pertinent to the problem being investigated .The researches that has been conducted in the past, it can be said that higher the self-efficacy of the students, the lower will be the academic procrastination or vice versa (Gungor, 2020). Aniljose & Basheer (2021) conducted a study on Academic procrastination and self-efficacy among college students. The results showed a clear negative relationship between academic procrastination and self-efficacy. The study also found a substantial difference in academic procrastination and self-efficacy between males and females. Males have more tendency to put things off than females, while females are more self- confident than males. Further findings from the study indicate a significant difference in academic procrastination and self-efficacy between male and female. In particular, men tend to put off things more than women do, while women feel more self- sufficient than men do. Cerino, E (2014) studied connection between academic motivation, self-efficacy and academic procrastination and it was revealed that there exists negative relationship between self- efficacy and academic procrastination. Malkoc & Mutlu (2018) revealed in their study that self-efficacy is inversely proportional to Academic procrastination. (Noran, 2000; Elias, 2008; Klassen and Kuzucu, 2008), they obtained that there is negative association between academic procrastination and self-efficacy.

From the above studies it has been found that several studies were conducted to know the relationship between self efficacy and academic procrastination among students. Unfortunately not a single study was found on the adolescent students of Kashmir valley. So this study is a humble attempt to address the current gap.

Operational Definitions
Academic Procrastination
For the present study, it is defined as the tendency of a learner to intentionally postpone academic chores afflicted by the behavioral, institutional and social nuances.

Self-Efficacy
In this study, it speaks to the faith and assurance of the students in their capacity to exert control over motivation, behavior, and social circumustances.

Adolescent Students
It refers to the students who are studying in 12th standard

Objectives
- To study the association between self-efficacy and academic procrastination of adolescent students of Kashmir valley.
- To study if any significant difference exists between academic procrastination of adolescent boys and girls.
- To study if any significant difference exists between self-efficacy of adolescent boys and girls.

Hypothesis
- Academic procrastination and self-efficacy among adolescent students in the Kashmir valley are not significantly correlated.
- There is no difference between academic procrastination of adolescent boys and girls.
- There is no difference between self-efficacy of adolescent boys and girls.

Methodology
The several approaches to the descriptive methods include survey research, case study, and observational method. Considering the aims, a normative survey method was chosen to know the academic procrastination and Self-efficacy among adolescents of Kashmir valley.

Sampling Technique and Sample
A sample is a part of the population that the investigator want to use as a basis for extrapolating their conclusions. Stratified random sampling was used in order to select the sample. 200 adolescent boys and girls from district Anantnag (Kashmir) were selected as a sample out of which 100 boys and 100 girls.

Tools used
Academic procrastination scale: The investigator constructed and validated an academic procrastination scale in (2022).

Self-efficacy scale: Self-efficacy scale constructed by Arun Kumar Singh and Shruti Narain (2014).

Statistical technique used

The researcher used the statistical procedure known as the "t" test and Pearson's product moment of correlation was also adopted for this study.

Analysis and interpretation

The results have been interpreted according to each hypothesis.

Hypothesis: 1 – There is no association between academic procrastination and self-efficacy of adolescent students of Kashmir valley.

Table 1

No.	Category	Students	R. v	P. v	Significance
1	Academic procrastination	100	-.452	0.000	Significant
2	Self-efficacy	100			

It depicts that there is significant negative correlation between academic procrastination and self-efficacy. Which means the more will be academic procrastination, the less will be the self-efficacy or vice versa.

Table 2: shows result of Mean, SD, t- value of adolescent boys and girls in relation to academic procrastination.

No.	Gender	Students	Mean	S.D	't'	P. v	Significance
1.	Boys	100	87.3	14.3	2.41	0.016*	Significant
2.	Girls	100	81.2	9.92			

This shows that the obtained 't' value is more than the table value at 0.05 level. Thus the statistical hypothesis stands rejected. Hence we can say that there is a difference between academic procrastination of adolescent boys and girls.

Table 3: shows result of Mean, SD, t- value of adolescent boys and girls with respect to Self-efficacy.

No.	Gender	No .of students	Mean	S.D	't'	P. v	Significance
1.	Boys	100	79.4	12.2	5.07	0.000*	Significant
2.	Girls	100	88.1	11.3			

It depicted that the obtained 't' value is more than the table value at 0.01 level. Hence the hypothesis is wrong. This indicated that there is a significant difference between self-efficacy of adolescent boys and girls.

Findings

• There exists significant and negative relationship between academic procrastination and self-efficacy which means that lower the self-efficacy of the adolescent students ,higher will be the academic procrastination or vice versa.

• There exists significant difference between adolescent boys and girls with respect to their academic procrastination. Adolescent boys are having more procrastination tendency as compared to adolescent girls.

• Significant difference was found between adolescent boys and girls with respect to their self-efficacy. Adolescent girls are having high sense of self-efficacy as compared to adolescent boys.

Discussion of the result

Academic procrastination is associated with the negative outcome of the students such as poor academic performance, poor emotional stability, deteriorated bodily and mental health. Students delay or postpone the academic chores and leave their tasks incomplete. It is obviously a severe problem that needs to be addressed as it has an adverse impact on students academic progress. So the goal of study was to draw conclusions about how academic procrastination and self-efficacy relate to one another. It was found that there is a inverse correlation between the two. In order to reduce the procrastinating behavior among the adolescent students, there is a need to develop self-efficacy as it makes the individual confident in their capacity to finish a goal or task. It can improve student performance, promote mental health and wellness, and act as a reliable predictor of motivation and learning. Students having high sense of self-efficacy exhibits higher academic performance and helps in reducing academic procrastination to a great extent.

Like Aniljose and Basheer (2021) revealed that there is a negative relationship between Academic procrastination and self-efficacy. Our result showed the same. According to this study, students having high sense of self-efficacy had low procrastination tendency. Our findings have also support from different researches which confirms that academic procrastination is inversely proportional to self-efficacy i.e when a students procrastination in academics increases, their level of self-efficacy declines (ALQudah, 2014; Noran, 2000; Elias, 2008; Klassen & Kuzucu, 2008).

Conclusion

The study focused on the Self-efficacy and academic procrastination. The findings showed a clear negative correlation between academic procrastination and self-efficacy among adolescent students. The findings also revealed a significant difference between male and female adolescent with respect to their academic procrastination, boys are having more procrastination tendencies as compared to girls. significant difference between adolescent boys and girls was also observed with respect to their self- efficacy, girls are having more sense of self-efficacy as compared to boys.

Educational implications

- Teachers should provide ample opportunities to the student's to take part in the process of making classroom decisions. He should also acknowledge and identify the student's achievement whole heartedly.
- **S**tudents should divide their tasks into minor parts to complete it one at a time instead of giving up. They should never feel over-confident regarding any task assigned and decide on not doing it.
- A student should never feel depressed by the judgmental remarks of the neighborhood and relatives.
- Parents should never pressurize their children to achieve more while comparing them with others.
- Parents should not quarrel before their children as it will negatively impact the child's personality development.
- The stake holders of education should focus on the methods to improve self-efficacy by providing orientation programs, workshops and keeping a check on the daily classroom behavior with an aim to decrease academic procrastination among students with low achievement.
- Teacher should set reasonable goals for the student and motivate them to take responsibility for their own education. By giving them the ability to choose their own course of action whether it comes to homework or classroom regulations. Since each student has a different set of personal strengths, talents, and needs, the teacher should accept each student as they are instead of comparing them to one another.
- Further research be done to known the connection between academic procrastination and self-efficacy based on age, locality.

Acknowledgement

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ATTITUDE OF ARTS AND SCIENCE COLLEGE TEACHERS TOWARDS E-LEARNING

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ABSTRACT
Education is no longer constrained to the four walls of the classroom, thanks to current technology, notably the Internet. Measuring attitudes and making attempts to enhance attitudes towards technology are critical to effecting change through technology. The main objective of this study is to determine whether teachers attitudes towards e learning alter based on various background variables. Purposive sampling was used to choose the teachers. The sample of 174 college teachers was selected for the study. The researcher developed the attitude of higher education teachers towards e-learning tools. According to the findings, male teachers show a more positive attitude towards e-learning than female teachers. Teachers who are working in aided colleges are better than their counterparts in the attitude towards e-learning. Teachers who have below five years teaching experience are better than their counterparts in the attitude towards e-learning.
Keywords: Technology, Electronic Learning, Learning Resources, College Teachers, Learning Environment.

Introduction

The learning process has evolved dramatically in the twenty-first century, as has the broader view on teaching and learning. With the advent of new technology, many conventional institutions have adopted innovative methods to improve student learning. The use of electronic media and information and communication technology (ICT) in education is known as e-learning. E-learning is a modern educational tool that first appeared in full force during the Corona period. E-learning not only revolutionises and makes education more accessible, but it also creates daunting difficulties to both professors and students. E-learning has a potential to foster learner participation, promote critical thinking, increase student motivation, and create a positive learning environment.

E-Learning Web Apps

E-learning web apps assist in the academic process of learners. It has broken down the barriers of location and time, allowing students and teachers to stay linked from anywhere in the world. Using e-learning web applications aids in providing learners with an excellent virtual learning experience. Google Classroom, Google Meet, Zoom Education, Scratch, Edmodo, and other interactive e-learning programmes are popular. E-learning technologies enable us to study at work, at home, or while travelling. It has increased open access to education, including full-time degree programmes.

Related Literature

Uyar (2023) explored the student's attitudes towards e-learning at territory level: a focus on Turkey: student's attitudes towards e-learning. The study engaged the participation of 930 students from Hatay Mustafa Kemal University, with 34 students participating in the qualitative component. The study employed the "Attitude Scale towards E-learning" and the "Semi-Structured Interview Form" to collect data. According to the findings, students exhibited a positive attitude towards e-learning. Male students, students with previous e-learning experience, students with a home internet connection, personal computers, and students majoring in technical

disciplines were shown to have a more favourable attitude towards e-learning. Students stated the benefits of e-learning as providing access from anywhere, simplicity of access, accessibility at any time, the opportunity to modify courses, and access to a wide range of material as advantages. Students mentioned failure in network connection, a lack of equipment, and a lack of internet access as challenges experienced throughout the e-learning process.

Alasmari (2022) investigated on the Attitudes of Public-School Teachers towards E-learning in Saudi Arabia. A quantitative approach was used, which included the usage of a Google Form questionnaire. The survey gathered answers from 202 public-school teachers of English across Saudi Arabia. According to the findings, teachers had generally neutral attitudes towards e-learning, positive opinions of its advantages, and neutral views of its limits. 55.4 percent of teachers said the training programme provided at the commencement of the year was beneficial. 54.8 percent of teachers believed that the initial use of e-learning in Saudi Arabia was a success. E-learning was chosen by 53 percent of teachers, while face-to-face sessions were favoured by 52.5 percent of teachers.

Prakasha et al. (2022) examined University Students' Attitude towards e-Learning and Their Academic Achievement during COVID-19. The current study provided an e-learning attitude scale to 840 students from a reputable university to determine if they had a good or negative attitude towards e-learning, and it also examined e-learning attitude across students' demographic factors. The study found a minor favourable relationship between e-learning attitude and academic success in postgraduate students but not in undergraduate students. Girls outperformed guys in terms of accomplishment and have a more favourable attitude towards e-learning. Boys expressed a dislike to e-learning.

Objectives Of The Study
1.   To investigate the attitudes of instructors working in Arts and Science Colleges towards e-learning.
2.   To determine if teacher attitude towards e-learning shift based on certain background variables.

Methodology
This study used the survey approach. The study's population consisted of teachers from Arts and Science Colleges in Tirunelveli District, Tamil Nadu. The sample was drawn from Arts and Science Colleges that have e-learning capabilities. Purposive sampling was used to choose the teachers. The research included 174 college teachers. The researcher developed the attitude of higher education teachers towards e-learning tools. The tool is made up of 16 statements. Ten of the sixteen statements were positive, while six were negative. To collect data for the current study, the researcher distributed the tools to teachers working in Arts and Science colleges.

Data Analysis And Interpretation
Table 1 Level of Attitude towards e-learning scores

Levels	Scores	No. of Teachers	Percentage
Low	0-25	28	16.09 %
Average	26-50	51	29.31 %
High	51-75	95	54.59 %

According to Table 1, the levels of attitude towards e-learning scores of arts and science college teachers in Tirunelveli District range from low to high. 16.09 percent of teachers belong to low levels, 29.31 percent teachers belong to average levels, and 54.59 percent teachers belong to high levels. A maximum of 95 teachers (54.59%) come under the high level category. Hence, it is concluded that the Arts and Science college teachers have a high level of attitude towards e-learning.

Table 2 Attitude towards e-learning and variables with respect to Gender

Category	Gender	N	Mean	SD	't' Value
Attitude towards e-learning	Male	46	69.74	6.50	0.30**
	Female	128	68.62	10.24	

** Not Significant at 0.05 level

Table 2 reveals that the 't' value of 0.30 is not statistically significant at the 0.05 level. The findings indicate that there is no significant difference in attitudes towards e-learning between male and female college teachers. Furthermore, it can be noted that male teachers mean attitude towards e-learning is 69.74, which is higher than female teachers mean scores of 68.62. As a result, it is determined that male teachers have a more positive attitude towards e-learning than female teachers.

Table 3 Mean scores of Attitude towards e-learning with respect to Locality of Residence

Category	Locality of Residence	N	Mean	SD	't' Value
Attitude towards e-learning	Rural	75	69.70	9.44	0.86**
	Urban	99	70.93	9.52	

** Not Significant at 0.05 level

Table 3 shows that the 't' value of 0.86 is not significant at the 0.05 level. The findings imply that there is no significant difference in attitudes towards e-learning between rural and urban Arts and Science College teachers. Further, it can be seen that the mean attitude towards e-learning scores of teachers living in urban area is 70.93, which is higher than that of the teachers who are living in rural area whose mean scores is 69.70. As a result, it can be concluded that teachers living in urban areas have a more positive attitude towards e-learning than teachers living in rural areas, regardless of their locality of residence.

Table 4 Mean scores of Attitude towards e-learning with respect to Locality of College

Category	Locality of College	N	Mean	SD	't' Value
Attitude towards e-learning	Rural	122	70.23	9.31	0.21**
	Urban	52	70.05	9.56	

**Not Significant at 0.05 level

Table 4 shows that the 't' value of 0.21 is not significant at the 0.5 level. According to the findings, there is no significant difference in attitudes towards e-learning between Arts and Science college teachers working in rural and urban areas. Furthermore, it can be noted that the mean attitude towards e-learning scores of teachers working in rural areas are 70.23, which is higher than the mean scores of teachers working in urban areas, which are 70.05. As a result, it is determined that teachers working in rural areas have a more positive attitude towards e-learning than teachers working in urban areas with respect to their locality of college.

Table 5 Summary of ANOVA showing the Significance of Difference among the Mean Attitude of E-Learning Scores of the Sample, sub-grouped on the basis of their Type of Management

Category	Type of Management	Sum of Squares	df	Mean Square	F
Attitude towards e-learning	Between Groups	162.36	2	81.18	1.32**
	Within Groups	4364.17	173	25.22	
	Total	4526.53	175		

** Not Significant at 0.05 level

The above table shows that the F value of 1.32 is not significant at 0.05 levels. The above table illustrates that there is no significant difference in the attitudes of Arts and Science College teachers regarding e-learning based on their type of management.

Table 6 Mean Techno-Pedagogical practices scores of the Sample, Sub-Grouped on the basis of their Type of Management

Variables	Type of Management	No. of Teachers	Mean
Techno-Pedagogical Practices	Government	21	26.82
	Aided	79	25.94
	Self-Finance	74	25.58

The table above displays the mean attitude towards e-learning scores of Arts and Science College Teachers of Tirunelveli District, sub-grouped by management type. Based on the data, it is stated that teachers working in aided institutions have a more positive attitude towards e-learning than their counterparts.

Table 7 Summary of ANOVA showing the Significance of Difference among the Mean Attitude of E-Learning Scores of the Sample, sub-grouped on the basis of their Teaching Experience

Category	Teaching Experience	Sum of Squares	df	Mean Square	F Value
Attitude towards e-learning	Between Groups	196.34	2	98.17	1.34**
	Within Groups	4126.78	171	24.13	
	Total	4323.12	173		

** Not Significant at 0.05 level

The accompanying table shows that the F value of 1.34 is not significant at 0.05 levels. The accompanying table illustrates that there is no substantial difference in the attitudes of Arts and Science College teachers regarding e-learning based on their teaching experience.

Table 8 Mean Techno-Pedagogical practices scores of the Sample, Sub-Grouped on the basis of their Teaching Experience

Variables	Teaching Experience	No. of Teachers	Mean
Techno-Pedagogical Practices	Below 5 years	23	26.32
	5-10 years	54	25.54
	10 years and above	97	24.18

The table above displays the mean attitude towards e-learning scores of Arts and Science College Teachers of Tirunelveli District, sub-grouped by Teaching Experience. Based on the above data it is concluded that the teachers who have below five years teaching experience are better than their counterparts in the attitude towards e-learning.

Major Findings

The following are the major findings of the study

❖   The level of attitude towards e-learning among Arts and Science College teachers is found to be high.

❖   Male teachers have high attitude towards e-learning than the female teachers with respect to their gender.

❖   Teachers who are living in urban area have high attitude towards e-learning than the teachers who are living in rural area with respect to their locality of residence.

❖   Teachers who are working in rural area have high attitude towards e-learning than the teachers who are working in urban area with respect to their locality of college.

❖   Teachers who are working in aided colleges are better than their counterparts in the attitude towards e-learning.

❖   Teachers who have below 5 years teaching experience are better than their counterparts in the attitude towards e-learning.

Suggestions

From the finding, it is found that there is a high level of attitude towards e-learning among Arts and Science College teachers which imply that the Arts and Science College teachers have realized the importance and benefits of e-learning. Similarly the level of attitude towards e-learning was found to be high. This reflects the

positive trend of the Arts and Science College teacher's in attitude towards e-learning for their future teaching. The management and the government should give importance for the attitude towards e-learning in the college like digital library, on-line learning, on-line journals etc. More facilities for attitude towards e-learning may be provided to the rural Arts and Science College teachers by providing in service training by the government. Workshop and seminar on e-learning integration in teaching and learning may be included in the college education curriculum at all levels. Establishment of proper instructional and infrastructural facilities for e-learning integration in all the college education should be made mandatory.

Discussion

it is inspiring to compare the findings about teachers overall views to the findings of karmakar and Behera (2015) , who discovers that higher secondary school instructor in west Bengal, India, had neither good nor negative attitudes towards e-learning however, current study's findings do not corroborate earlier research on instructors' views towards e-learning. The study included 258 teachers selected from four higher education institutions using stratified, simple random selection. Teachers were shown to have good attitudes towards e-learning, with computer exposure playing a statistically significant role in their opinions. It is advised that teachers receive e-learning training to broaden their expertise of e-learning (Kisanga 2016). During Covid-19 in Pakistan, there was a positive association between technology acceptability and e-learning among teachers. Overall, respondents were positive about e-learning acceptability during the lockdown scenario and its effects on students' academic achievements (Alhumaid 2020). The study's findings indicate that gender disparities (male or female) has no effect on university students' attitudes, and that faculty members at Mosul University have the potential to successfully execute e-learning programmes (Younis 2021). Online learning, which is based on the use of various electronic educational platforms, differs substantially from the old systems and fundamentally alters the whole educational process, including modes of knowledge acquisition, control and assessment (Mukhametshin 2021). Students who have access to a computer have much better attitudes than those who do not. 72.2 percent students disagreed with the statement, "E-learning will provide me with better learning opportunities than conventional learning methods"(Gullu 2022). Male students were considerably more confident than female students when it came to connecting to the internet and printing items from it. Students who had had previous exposure with e-learning indicated that they would be significantly more nervous working with computers than those who had not (Sanchez 1023).

Conclusion

However, additional research on this problem is required because this study only included Arts and Science college teachers. There is a good chance that the findings will differ from one field to the next. Furthermore, further study is required in each region of India to precisely assess the benefits and drawbacks of e-learning. These views may change in the future for both teachers and pupils when training programmes are implemented. This highlights the need for more study in this area. As this study used a quantitative technique, future research could employ a qualitative or mixed approach to learn more on e-learning. In conclusion, study on student's attitudes is needed since they are one of the most influential factors influencing the effectiveness of the learning process.

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BLENDED MODE OF LEARNING: NEW NORMAL FOR 21ST CENTURY LEARNERS

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ABSTRACT
COVID-19 pandemic affected the education system severely. During this difficult time to avoid the social interaction, students and teachers faced various challenges. However, after significant decline in COVID cases, blended mode of learning appeared to be more practical and relevant learning approach. The main aim of this research is to know the perception of students towards blended mode of learning and to compare the factors towards blended mode of learning amongst students at undergraduate and postgraduate level. The study highlighted three factors of Blended mode of Learning i.e., Flexibility and time management, interaction and instructional materials and learning outcomes. The results show no significant difference between level of perception amongst undergraduate and post-graduate students in blended mode learning. There is no difference between undergraduate and postgraduate students with respect to flexibility and time management and learning outcomes factor while the study highlighted the significant difference between undergraduate and post-graduate students with reference to the Interaction and Instructional Materials.
Keywords: Blended Learning, Comparative analysis, E-Learning, Higher Education, Online Learning, Perception, Students, Teaching

Introduction
Education is one of the means to reach to the destination of success**.** It is a set of procedures which prepares a person to be competent enough to run in the race of life. Education starts from very young age and it never stops or ends. The teaching methods used for education could be many but the most accepted are classroom and online teaching. One of the most distinctive styles of education which is more noticeable in recent days is "Blended mode of learning". Blended mode learning means combining two processes of learning pedagogy i.e. online and face-to-face learning together. Blended mode learning is a mix of digital and on campus activities, where a student can opt between the two modes of teaching.

Due to the COVID-19 outbreak, the education system was terribly affected. Many education institutions switched to online education and carried on with the same. As per UNESCO report, "191 countries in the world (98% of the global student population) switched to online lessons." Microsoft Teams, Google Classrooms were few common sites. COVID-19 was the period when everyone shifted to online methods of learning, as offering on-site lessons was difficult. Blended mode of learning was opening doors for the learners to attend classes in either traditional place-based classrooms or online classes as per their convenience. Covid-19 highlighted the requirement of "integrated learning" which is flexible and suitable for learners and educators.

Conceptual Framework
Definitions of "Blended Learning"
According to Oxford Dictionary. "Blended Learning is a style of education in which students learn via electronic and online media as well as traditional face-to-face teaching." Blended mode of learning is combination of online educational materials and old place-based classroom methods. It is an educational style in which the physical presence of learner and educator is required, where both have control over pace, path, place and time. It opens a flexible platform in choosing the mode which the learner feels comfortable. It is a style of teaching wherein a learner has two options to be chosen as the medium of learning namely, face-to-face and online learning. Chew et al., (2008) revealed that "blended learning involves the combination of two fields of concern: education and educational technology".

According to University Grants Commission (UGC) New Delhi, "Blended mode of education is an instructional methodology, a teaching and learning approach that combines face-to-face classroom methods with computer mediated activities to deliver instruction. This pedagogical approach means a mixture of face-to-face and online activities and the integration of synchronous and asynchronous learning tools, thus providing an optimal possibility for the arrangement of effective learning processes. Blended learning is the term given to the

educational practice of combining digital learning tools with more traditional classroom face to face teaching. Resources such as video lectures, podcasts, recordings, and articles would be provided to transfer the main bulk of the necessary knowledge from teacher to student before each class. This then frees up time in class for teachers to support students in activities, lead discussions and facilitate engagement."
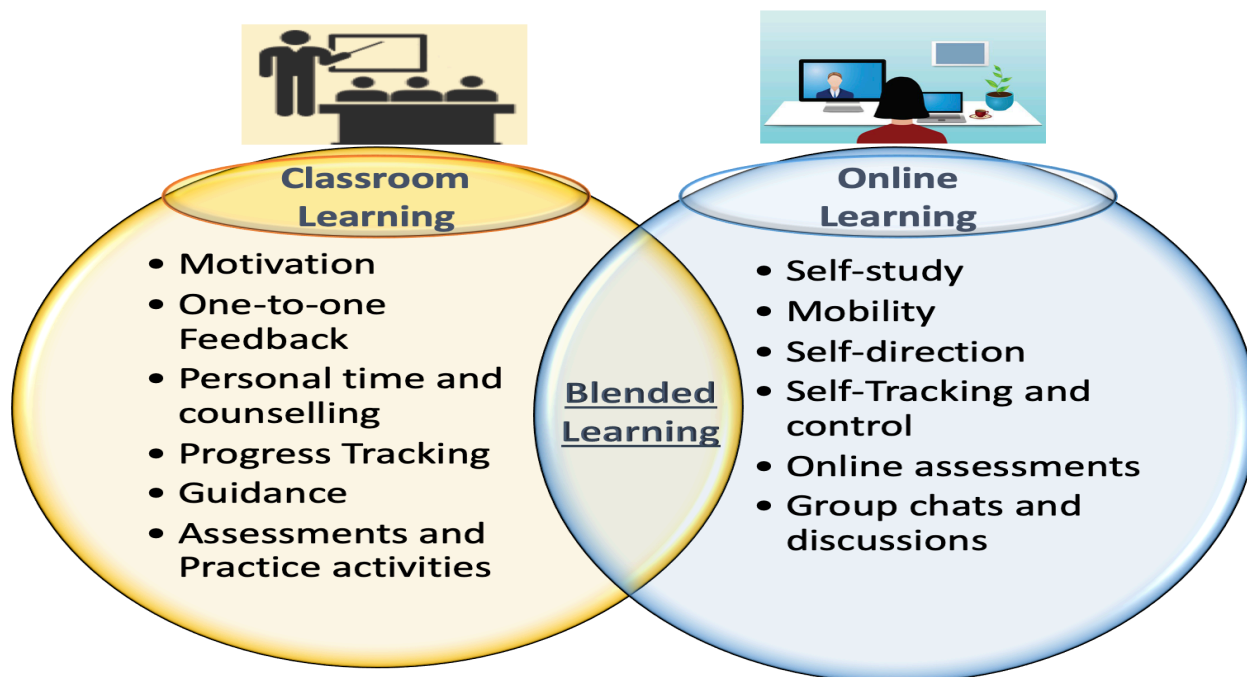
Figure 1: (Source : designinginsturctionwith k.com /2019/06/23/blended learning)

According to Krasnov (2015) blended learning is a "method of teaching that combines the most effective face-to-face teaching techniques and online interactive collaboration, both creating a system that functions in continuous association and formulate a single whole". ASTD (American Society for Training and Development) identified top ten trends in the knowledge delivery industry and blended learning was one of them (cited by Rooney, 2003). As per Singh (2003), blended learning is a combination of "effectiveness and socialization opportunities of the classroom with the technologically enhanced active learning possibilities of the online environment, rather than a ratio of delivery modalities". Dziuban et al. (2004) highlighted that blended learning is merging of internet and digital media with classroom which requires the physical of students and teachers.

Friesen (2012) revealed that methods used in blended learning keeps the life of students active while providing the social connectivity which is essential for clear communication, finally supporting success and retention. According to Graham (2013), blended learning as a combination of online and offline experiences "to generate effective, efficient, and adaptable learning". As per Staker and Horn (2016) blended learning is a "formal education program in which students have control over time, place, path, and pace and at least in part at a supervised brick-and-mortar location away from home". Some researchers highlighted that "Blended learning as most suitable and advanced methods for university education that acquaint the learner with continuous learning to educate himself and develop his knowledge because the goal of university education is to develop critical and creative thinking skills and generate new knowledge." Thus, the students of university can endure their learning in the future (Oweis, 2018; Tongchai, 2016).

Significance of Blended Mode Learning
Blended Mode learning provides flexible learning process as learners can opt between two modes according to their flexibility. It is more convenient as learners can learn without the hurdles of location and time. Blended mode helps in time management as a learner can choose between two modes according to his/her other workload. Blended mode is suitable for large number of audience and can reach to them in a short duration. In blended learning mode a lesser number of classrooms, training centers and instructors are required therefore, less cost incurred in it. Less commuting time is also the benefit of blended mode of learning.

Models of Blended Learning

The six original models of blended learning are *Face-to-face driven model* in which classroom learning is escorted with online learning; *Rotation model where students rotate* between online and other classroom-based experiences; *Flex model where* students learn mostly online as per their personalized time table, and teachers offer face-to-face support whenever needed; *Online lab model* is a traditional studies is accompanied by an extra online on-campus course; *Self-blend model* is a traditional study is accompanied by extra off-campus online course and *Enriched virtual model where* learning takes place mostly through online method with infrequent visits to a brick-and-mortar setting for face-to-face tuition.

Later, Stake and Horn (2016) revised original model and left with the enriched virtual, flex, rotation and self-blend models. R*otation Model* combines online engagement with face-to-face instructions in a periodic way, *In Flex Model* many students get involved primarily online, under the direction of an educator who is physically present, In S*elf-Blending Model* - students select different courses independently, but a teacher and other students are also present and in E*nriched-Virtual Model* virtual experiences are enriched only periodically through physical co-presence.

T**able 1 Three Models of Blended Learning.**
(Source: Hannon & Macken (2014)

MODEL 1	MODEL 2	MODEL 3
Blended presentation and interaction	**Blended block**	**Fully online**
Activity-focused face-to-face sessions blended with online resources. For example, the flipped curriculum model combines: • short lecture podcasts, online resources with • face-to-face tutorial/seminars for interaction and presentation of group work.	Combination of: • intensive face-to-face sessions as one day or half days • weekly online tutorial/seminars for activities and interaction • online content and resources	Combination of: • short lecture podcasts with online resources and learning activities • online tutorials (synchronous) • interaction via online collaboration, discussion forums and/or group work

Literature Review

Bhushan (2020) highlighted that there should be combination of online and offline learning where students can interact with their teachers whenever need arise. In online teaching, there must be a regular meeting of teachers and students. Online/offline choice must be given to students for doubt clarification and discussion. For smooth functioning of online learning student's must be provided with a complete support system. Khan et al. (2012) recognized blended mode learning as accessible, varied, interactive, flexible and efficient learning experience for educators and learners. Blended mode learning method is the assortment of technology supported learning methods and prevailing old-style classroom-based learning. Continuous evaluation is significant in judging the knowledge of the students in the subject at all levels. Through blended mode of learning lecture delivery and student's assessment can be done in creative and innovative manner.

Dallas (2021) suggested that the COVID-19 pandemic has enhanced the possibilities of new teaching pedagogy such as hybrid learning for the future education. This has proven that education has no barriers and students can learn anytime, anywhere and anything. This creates increased need of advanced technology and resources for management and teachers. The author suggested that as teachers plan, the role of hybrid learning will be important in the future of education. AT&T's (2021) Future of School Report says:
- Adequate resources, curriculum, and support are the choice of 94 percent teachers in hybrid learning
- 71 percent of teachers support virtual classes for inclement weather
- Virtual tutoring sessions or enrichment programs are the choice of 78 percent teachers
- Classroom live streaming for home sick students is the choice of 60 percent.

Marquis et al. (2017) suggested that higher educational institutes have demands to develop and deliver course content through alternate modes of delivery. In current years a variety of courses have been developed out of which one is blended course design or hybrid model. The study noted a very slight difference in performance of

the student between hybrid model and traditional instruction model. India Today Web Desk (2021) survey revealed that Covid-19 has also proven that in a very short period the convenience and flexibility feature of integrated learning make online education an important element of the education system. "Majority Indians prefer a mix of online and in-person training or course. 81% of people in India believe that students can have a good university experience combining in-person and online, hence giving way to blended learning."

It further adds, "Whereas, 88% of learners globally say online learning will be a permanent part of primary, secondary and higher education moving forward. 87% of Indian students think online learning will be a part of the education experience moving forward. Thus, the blended learning approach will be the norm in the new normal adopted by educators." Muller et al., (2020) pointed out that although the significance of blended learning is increasing day-by-day in the field of management education, but the existing research shows unpredictable results. Dropout rates continue to be high, and learners prefer face-to-face over online meetings. Whereas, several studies found significant effects of blended environments and its main features on learning effectiveness.

The findings of a research with 115 management graduates highlighted cognitive characteristics such as experience, as an main mediator. Accordingly, management scholars while examining blended learning environments should keep in mind the subsidiary effects from related disciplines. Furthermore, instructors confirm flexibility and interaction should be there in environment of blended learning, and they are liable for cognitive learner characteristics. Hapke et al. (2021) proposed that "a learning innovation called 3-in-1 Hybrid environment as a solution for educational institutions to meet the challenge of balancing campus reopening against public health risks amid the COVID-19 pandemic".

The study revealed that hybrid learning innovation enhances emotional, behavioral, and cognitive engagement. It gives choices to the students to join class synchronously (face-to-face or remote) or asynchronously (online) in an interactive learning setting. The study found that there is a positive attitude towards 3-in-1 Hybrid learning. The students found that the high percentage of attendance and less number of missed quizzes and homework; and quiz performance are strong mediators between synchronous attendance and actual learning.

Objectives
- To identify the factors influencing perceptions of undergraduate and post graduate students towards blended mode of learning.
- To compare the identified factor of blended mode of learning amongst undergraduate and postgraduate students.
- To compare the perception of undergraduate and postgraduate students towards blended mode of learning

Method
The Study
The study aimed to identify the factors affecting perception of students towards blended mode of learning.

The Sample
An investigation was conducted using post-graduate and undergraduate students of private institutes in Madhya Pradesh, in India. Convenience sampling method was used as the sampling method in the study. The sample size was 200 students (100 undergraduate and 100 post graduate) of private institutions. A valid sample of a study should be five times of the number of questions in the questionnaire. The total number of 200 students in this study, which suggests that it is a valid sample (Wu, 2012),.

Tools for Data Collection
A self-structured questionnaire was designed. The questionnaire included the five-point Likert Scale. In total 13 items were used for this study excluding items used for demographic variables that contained gender, age, and level of education

Tools for Data Analysis
To find out results for interpretation, Reliability, Kaiser- Meyer-Olkin (KMO) and Bartlett's test of sphericity, Z-Test and Factor Analysis were used to analyze data using SPSS.

Reliability of the Measures
Reliability of the measure was calculated with the use of Cronbach's alpha on all the 13 items. Cronbach's alpha allows to measure the reliability of different variables. It is consisted of estimates of how much variation in scores of different variables is attributable to chance or random errors (Selltiz et al., 1976). A coefficient greater

than or equal to 0.7 is considered acceptable and a good indicator of construct reliability (Nunnally, 1978). The Cronbach's alpha for the questionnaire was found to be 0.816 (Table 1). Hence, it was reliable for further analysis.

Table 1: Reliability Statistics

Cronbach's Alpha	N of Items
.816	13

KMO & Bartlett's test of Sphericity
KMO (Kaiser-Meyer-Olkin) Measure and Bartlett's test value was.874 (Table 2), The Factor analysis depends on the scores of KMO (Kaiser-Meyer-Olkin) which indicate the suitability of the data for the factor analysis. Higher values of KMO indicates that the factor analysis is statistically appropriate for data analysis. The value of KMO close to 1 would explicate a perfect relationship between variables and thus make sure that the findings of factor analysis can be considered appropriate. If the value of KMO is below 0.5, then it is recommended that the factor analysis is not appropriate somewhat the researcher should try to gather more data.

Table 2 : KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.874
Bartlett's Test of Sphericity	Approx. Chi-Square	2.019E3
	Df	78
	Sig.	.000

Factor Analysis
Factor analysis is used for data reduction to classify most important factors which are significant in the study. There were three factors identified which affected the perception of the students towards Blended Learning. These factors were named appropriately based on the variables. Table 3 presents factor loadings and naming of the factors as follows.

Table3 : Rotated Component Matrix

	Component		
	1	2	3
VAR00002	**.810**	.005	-.069
VAR00006	**.803**	-.025	-.050
VAR00001	**.801**	.079	-.142
VAR00011	**.739**	.030	-.004
VAR00003	**.737**	.022	-.075
VAR00012	-.153	.732	.282
VAR00008	.039	.694	-.089
VAR00013	-.154	.686	.224
VAR00007	.069	.668	.132
VAR00010	.110	.000	**.789**
VAR00009	-.204	.079	**.742**
VAR00004	.186	.849	**.426**
VAR00005	.332	-.614	**.278**

Factor 1 - Flexibility & Time Management
This factor has a load of 3.89. It includes a total of 5 items. Item 2 "Blended Mode of learning provide Flexibility in Learning Process (.810)", item 6 "Blended Mode of Learning an Ease in Learning Process (.803)", item 1 "Blended Mode of Learning is Convenient" (.801), item 11 "In Blended Mode of Learning Comfort Level is High (.739)" and item 3 "Blended Mode of Learning helps in Efficient Time Management (.737). This factor has highest factor load. The findings of present study are as the study of Pechenkina and Aeschliman

(2017). The authors reported that flexibility, opportunities of face-to-face interaction along with streamlined feedback and accessibility are the main factors for student's choice for blended learning compared to completely face-to-face or online education.

According to Rovai (2003) and Selim (2007), time management and computer competency of the learner are important in distance learning contexts as well as in online classes. Song et al. (2004), found that time management is a critical factor in online learning effectiveness. "Creditability, accessibility, flexibility, personalization, transparency, productivity, and interactivity are success factors that motivate students to participate in online and blended learning" (Blieck et al., 2019). Kintu et al. (2017) showed that self-regulation of learner was good enough at 72.3 percent in goal setting, task strategies, time management, environmental structuring, self-evaluation and help-seeking and among students.

Factor 2 - Interaction and Instructional Materials

This factor has a load of 2.78. It includes a total of 4 items. Item 12 "In Blended mode of Learning the Interaction with the Instructor is Easy (.732)", item 8 "Blended Mode of Learning provides good quality of instructional materials to Learner (.694)", item 13 "Interaction with Peers in Blended Mode of Learning is Easy (.686) and item 7 "Combination of Face-To-Face Learning and Online Learning Meet Learning needs of learner (.668)". This is another important factor of Blended mode of learning for students. The findings of the present study are supported by the findings of Salameh (2005, cited in Al-Zu'bi and Bani-Domi, 2012) who identified important factors of blended learning success namely, student-teacher interaction, teamwork, flexible test, continuous communication, content frequency, and enhancing student self-learning.

The research highlighted that lack of student interaction causes failure and drop-out in online courses (Willging and Johnson, 2009). Lack of learner connectedness was also identified as an important internal factor leading to drop-out in online courses (Zielinski, 2000). It was also found that learners may not continue in e-learning and blended learning if they are not able to make friends, thereby, being disconnected and developing feelings of isolation during their experiences in blended learning (Willging and Johnson, 2009). Interactions of Learners with educators and peers can make blended learning effective as lack of interaction makes makes learners to withdraw (Astleitner, 2000).

Dani et. al. (2018) identified the factors which affects the perception of students in online learning namely, effective teaching, participation, popularity, convenience, promptness and personal attention, cost effectiveness and quality oriented. The authors concluded that familiarity of online learner with the online instructor provides more relaxation in online class. The instructor plays a very important role in online class because he has more liability in online class. As per the report of US Department of Education (2009, p. xvii), in online learning for enhancing the learning the students are motivated to devote more time engaged with the learning materials and this become important to online learning and play a key role in effective listening practice (Blake, 2011; Yang et al, 2013).

ess of blended learning has been deemed by Stacey and Gerbic (2008) as a concept related to learning practices that result in a high-quality learning outcome, a high level of student learning experience and a high level of teacher satisfaction, considering that learning using this modality requires an acceptable workload. A key vein of the literature on blended learning examined factors affecting students' performance or learning outcomes in blended learning environments. Lim and Morris (2009) studied the effect of learner and instructional variables on learning outcomes and found that leaner, instructional, and motivational variables had significant effects on learning outcomes, i.e., perceived learning application. Salameh (2005, cited in Al-Zu'bi & Bani-Domi, 2012) identified some factors of blended learning success such as student-teacher interaction, teamwork, flexible test, continuous communication, content frequency, and enhancing student self-learning. Al-Hadhoud & Al-Hattami (2017) indicated that the implementation of blended learning is still limited to some obstacles such as lack of Internet access, classroom congestion, limited computerized curriculum, and low skills of using Internet and computers, lack of training on the implementation of blended learning, interrupted training of new teachers, and theoretical training course. Al-Fuhaid (2015) conducted a study to identify the current utilization as well as requirements and obstacles of blended learning using a sample of educational supervisors and teachers from Qassim region, Saudi Arabia. The results pointed out that the availability of computer labs at the school, data show devices at the school, web-based learning content, Internet or Intranet at the school, smart boards at the school, virtual classrooms, interactive e-courses, learning management system, and personal computers for students' use. Harris et al. (2009) provided practical recommendations on adoption and implementation of blended learning. These recommendations include evaluation of blended learning in terms of cost effectiveness and student motivation and satisfaction, resources access and usability of blended learning system, adequate training for educational staff and students, learning outcomes, and technology. Creditability, accessibility,

flexibility, personalization, transparency, productivity, and interactivity are success factors that motivate students to participate in online and blended learning (Blieck et al., 2019). Course structure, emotional support and communication medium was identified by So and Brush (2008) as success factors of collaborative learning in a blended learning environment. In their paper in blending learning approaches, Alammary et al. (2014) identified three approaches: low-impact, medium-impact, and high-impact designs. In the first approach, the teacher adds extra activities to the existing course, while in the second one, the teacher replaces some activities in the existing course, whilst he or she in the high-impact design builds a new blended course. Apart from specific design, the authors identified some challenges in this regard such as teachers' technological knowledge, inadequate compensation and incentives, lack of prior experience in teaching the traditional course, and teachers' skills in designing e-courses

Factor 3 - Learning Outcomes

This factor has a load of 2.235. It includes a total of 4 items. Item 10 "Blended Mode of Learning motivates the learner to learn (.789)", item 9 "Learner feels satisfy with the outcome of Blended mode of learning (.742)", item 4 "Performance of Learner improves significantly in Blended Mode of Learning (.426) and item 5 "Learner take interest in blended mode of learning (.278)". This is identified as third key factor of Blended mode learning. Lim and Morris (2009) supported this finding and highlighted that motivational and instructional variables alongwith the learners had significant effects on learning outcomes. Harris et al., (2009) provided practical recommendations on acceptance and application of blended learning which includes blended learning evaluation in terms of cost effectiveness, resource access, usability of blended learning system, student motivation and satisfaction, , adequate training for educational staff and students, learning outcomes, and technology.

Wu and Liu (2013) found a favorable association between student's satisfaction and perceived usefulness, system learning atmosphere, system performance, perceived enjoyment, social interaction, , content specificity, performance expectation in blended learning. Motivation is observed as an outcome here because, cognitive factors like course grades and affective factors like intrinsic motivation may also be used to specify outcomes of learning (Kuo et al., 2013). Research highlights that high motivation as the key determinant in online courses (Menager-Beeley, 2004). Sankaran and Bui (2001) found that learners who are less motivated has poor performance in knowledge tests while learners with high motivation shows high performance in academics (Green et al.,2006). Kintu et al., (2016) indicated learner's attitudes towards blended learning as important factors to the satisfaction of learner and motivation while managing the workload was considered as key factor to learners satisfaction and knowledge construction. Amongst all the features of blended learning, interaction with learner was a main factor to learner satisfaction and knowledge construction.

Factor Comparison

H_{01} : There is no significant difference between the perception of undergraduate and post students with respect to Flexibility and Time Management in blended mode of learning.

The Z-test was carried out to compare the Flexibility and Time Management factor of blended mode of learning amongst postgraduate and undergraduate students. The Z-test revealed that p value is 1.67, which is less than 1.96, which indicates that H_{01} is accepted at 0.5 percent level of significance (Table 4). It suggests that there is no substantial difference between undergraduate and post-graduate students with reference to Flexibility and Time Management. However, the mean grade for postgraduate students (M=13.8263) was higher compared to undergraduate students (M=11.2579). The finding of the study supported by Kaur (2013) who revealed that individualization, personalization increases through blended mode learning and the learners have better learning experience in blended mode of learning. There is no difference between undergraduate and postgraduate students with respect to flexibility and time management may be because flexibility and time management is the main characteristic of blended mode learning. In blended mode learning the learners have better control over learning and can manage the pace of learning accordingly.

Table 4: z-Test: Two Sample for Means

	Variable 1	Variable 2
Mean	18.42	17.61
Known Variance	13.8263	11.2579
Observations	100	100
Hypothesized Mean Difference	0	
Z	1.617278792	
P(Z<=z) one-tail	0.052909058	

z Critical one-tail	1.644853627
P(Z<=z) two-tail	0.105818115
z Critical two-tail	1.959963985

H$_{02}$ There is no significant difference between perception of post graduate & undergraduate students with respect to Interaction and Instructional Materials with respect to blended mode of learning.

The Z-test was carried out to compare the Interaction and Instructional Materials factor of blended mode of learning amongst postgraduate and undergraduate students. The Z-test revealed that p value is -0.699, which is higher than -1.96, which indicates that H$_{02}$ is rejected at 0.5 percent level of significance (Table 5). It suggests that there is substantial difference between undergraduate and post-graduate students with reference to the Interaction and Instructional Materials Factor. However, the mean grade for postgraduate students was higher (M=7.1379) in compare to undergraduate students (M=5.6204). It may be because postgraduate students feel teacher's interaction is important for outcome. Through collaboration and interaction, they can do better online preparation. High achievers preferred blended format more in comparison to low achieving students (Owston et al., 2013).

Table 5 : z-Test: Two Sample for Means

	Variable 1	*Variable 2*
Mean	13.61	13.86
Known Variance	7.1379	5.6204
Observations	100	100
Hypothesized Mean Difference	0	
Z	-0.699912264	
P(Z<=z) one-tail	0.241991049	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	0.483982098	
z Critical two-tail	1.959963985	

H$_{03}$ There is no significant difference between the perception of post graduate & undergraduate students with respect to Learning Outcomes in blended mode of learning.

Table 6: z-Test: Two Sample for Means

	Variable 1	*Variable 2*
Mean	13.27	12.79
Known Variance	3.8971	5.0259
Observations	100	100
Hypothesized Mean Difference	0	
Z	1.606888678	
P(Z<=z) one-tail	0.054039395	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	0.10807879	
z Critical two-tail	1.959963985	

The Z-test was carried out to compare the Learner Outcomes factor of blended mode of learning amongst postgraduate and undergraduate students. The Z-test revealed that p value is 1.60, which is less than 1.96, which indicates that H$_{03}$ is accepted at 0.5 percent level of significance (Table 6). It suggests that there is no substantial difference between undergraduate and post-graduate students with reference to the Learner Outcomes. The finding is supported by Paul and Jefferson (2019) who showed no substantial difference in the performance of the student with respect to class, rank or gender between online and face-to-face. Daymont and Blau (2008) the learning of online learners, irrespective of class rank or gender are same in electronic interaction as well as in one-to-one interaction. Kemp and Grieve (2014) revealed that academic performance of students in face-to-face

and online learning are same. However, the present study highlights that the mean grade for postgraduate students was higher (M=3.8971) than the mean grade for undergraduate students (M=5.0259). The reason for this disparity may be the postgraduate students are mature, sincerer and take more interest in study.

Z-Test Two Sample for Means
H$_{04}$ There is no substantial difference between the perception of post graduate & undergraduate students with respect to learning outcomes in blended mode of learning.

The Z-test was conducted to compare the perception of postgraduate and undergraduate students in the blended learning set up. The aim was to find out that post graduate and undergraduate students do have same level perception towards blended mode of learning. The Z-test revealed that p value is 1.203, which is less than 1.96, which indicates that H$_4$ is accepted at 0.5 percent level of significance (Table 7). It suggests that there is no substantial difference between level of perception amongst undergraduate and post-graduate students in blended mode learning. However, the mean difference states that postgraduate student's perception is slightly higher (M=45.3) than undergraduate students (M=44.6).

The study conducted by Kazu & Demirkol (2014) compares between blended learning environments to find the difference between gender performance, academic achievement and grade dispersions. The study highlighted no substantial differences between the groups. Barnes (2017) found the significant difference among the different age categories, 18-24 years students feel that more learning occurs in Face-to-Face classes compare to online mode of learning. However, students above 30 years, who are more mature and self-motivated, found the online classes more suitable. No substantial differences was identified between male and female learners and different age groups i.e, young adults, middle-aged and above 45 years learners. (Coldwell, et.al, 2008). This suggests that probabilities for blended learning to be operative is high as it is free from gender or age differences.

Table 7: z-Test: Two Sample for Means

		Variable 1	Variable 2
Mean		45.3	44.26
Known Variance		38.61	36.09
Observations		100	100
Hypothesized	Mean		
Difference		0	
Z		1.203297566	
P(Z<=z) one-tail		0.114430595	
z Critical one-tail		1.644853627	
P(Z<=z) two-tail		0.22886119	
z Critical two-tail		1.959963985	

Conclusion
The present study showed the perception of the students towards blended mode learning and highlights that blended mode learning is an effective learning. "Flexibility" is the important characteristic of blended mode of learning. Through this student can control their learning and developing skills. A blended mode of learning can be developed by give leverage in activities, assignments, and technology to develop and arouse the interest of students while increasing their engagement. The analysis highlighted three factors of Blended mode of Learning i.e., Flexibility and time management, interaction and instructional materials and learning outcomes. Blended learning is very important and emerging form of education, that provide benefits to both educators and students. It will provide more independence and increase the creativity of the learner.

Therefore, it can be concluded that blended learning can be a future of our education system if it is implemented by considering the need of the teachers and learners. Students are interested to see advanced blended learning model which helps them to enhance their outcome with flexibility, time management and high-quality instructional material. The new education policy (NEP) clearly mentioned that pay more attention to adopt a policy that is undeniably student centric therefore, necessary steps should be taken for adopting blended learning soon.

Suggestions & Implications
Learning experience in face-to-face learning and online learning is not always same. The instructors or teachers should create such an environment which engages and motivates the learners keeping in mind both the modes so

that in blended mode both the modes used gives same learning experience to the learners. In blended learning it can be ensured that technical subjects which require practical could be taught through face-to-face and on the other hand soft skills teachings could be done through online teachings. In blended mode of learning students might feel difficult to balance between face-to-face with online learning which could result in giving extra mental load to the students. So, the curriculum and the syllabus for blended learning must be created as per the needs of learners. At the initial stages the setup must be done keeping in mind both the learner's knowledge and instructor's experience.

A system must be developed where instant feedback is given to the learners about their performance by the instructors which would improve the interaction in blended mode of learning. Similarly, the learners could also give feedback about the teaching pedagogy in blended mode of learning. The present research study could help the educational institutes, universities, and colleges to understand the student's perception towards blended mode learning. The research could be used by teachers and instructors to understand blended mode of learning with its pros and cons. The present study could be used to understand the problems that could occur while implementing blended mode of learning in educational institutes.

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COMPETENCY AND IMPORTANCE OF LIFE SKILLS FOR THE PSYCHOLOGICAL WELL-BEING OF VOCATIONAL STUDENTS

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ABSTRACT
This paper examines the significance of life skill-based education in improving the quality life of students. Through this paper, the author addresses the issues that are faced by adolescents at higher education levels, specially focused on vocational trainee students. Vocational training courses like polytechnic and ITIs are designed towards the destination of enhancing employability in the country. Most of the youth in the country are provisioned to employment through these courses and students are in great need to learn life skills to progress through their careers. The objective of the study is to investigate the potentiality of life skills that students should acquire to withstand personal and professional lifestyles and to learn a balanced way of approach to excel in their careers. Life skills teach students with great psychological devolution that aids people, to face the troubles of their day-to-day existence with a remarkable way of thinking and go about with their daily obligations effectively. To cope with the growing tempo and changes of this advanced era, life skills are an important area that needs to be taught in the education, especially in the polytechnic curriculum. Keeping the present Indian context in mind, the paper tries to explore the avenues that can be used to develop life skills among adolescents. It also briefs on the benefits of life skills in the psychological development of students and methods of teaching life skills.
Keywords: Vocational Education, Psychological Development, life skills.

Introduction

Change is the only certainty of life and it is the law of life. People who take change as a challenge are the ones who can succeed in their life. Adaptability to change is also a big life skill that is an essential component of one's personality. Today's society has changed a lot so as the educational system, culture, and civilization of people. In order to address the dynamism of contemporary society, students should learn new things like how to deal with stress and distress. The type of jobs most of the youth are choosing are industry-based where they should have the capacity to effectively manage and address the challenges they encounter.

Life skills refer to a set of abilities and competencies individuals possess, which are necessary to effectively navigate and overcome the various problems encountered in daily life responsibilities efficiently. Education in life skills guide us towards the dual highway to growth and development, allowing us to live as effectively and expeditiously. To be competent to manage challenges of everyday living in a constantly changing environment, it is needed to possess skills to resist the existing competency. The awareness of life skills itself is the foundation to all other subjects and knowledge.

Significance And Impact Of Life Skills

Liberalization, privatization, and globalization have helped us to get a deeper discernment for other cultures. Despite this transfer of knowledge and awareness, one should aim for a broad grasp of life skills. Value education and psychology aren't the only sectors where "life skills" are getting a lot of attention but personality development is emphasized; The process of acquiring life skills is as essential as the learning core content of education in fact the very purpose of education itself is to bring the best in personality development. Stimulating new abilities is challenging in the beginning, and it needs a significant amount of perseverance and encouragement from others.

The demand towards life skills is increasing day by day due to technological development, changes in the work environment, globalization, and a customer-driven market. To cope with the increasing pace and trend, students now a days need new life skills such as the ability to deal with stress .

Present-day education develops knowledge ,but it does little to develop skill sets. There is no use for knowledge that multiplies without proper skills.Adolescence is a critical phase of transition and development, serving as a transitional time between childhood and maturity. It is also the stage when young people extend their relationships beyond parents, family and they are intensely influenced by their peers and outside world in general ,which is also characterized by rapid physiological changes and maturation. This phenomenon is distinguished by rapid physiological transformations and maturity. Adolescence is a crucial juncture in an individual's lifespan,with an increasing opportunities towards growth and development, to face various challenges and risks.

Adolescence is a turning point in one's life, it's a period of increased potential but also one of great vulnerability. This is the main incubation phase, Students undergo many emotional and physical changes in their adolescent stage in shaping their personalities, particularly students studying vocational education in polytechnic and ITIs are stepping backward in shaping their personalities due to lack of proper guidance. Life skills can build the bridge between their ambiguity of unfair state of psychological changes and strong abilities subsequently leading to a healthy and productive life. Life skills promote mental well-being in personal actions directed to others, and actions to change the surroundings that influence our whole evaluation of mental and physical well-being.

The Objective Of The Study
Life skills make people unique from their contemporary or peer group. Those who possess leadership qualities , communication skills, problem-solving, and teamwork are preferred in most recruitments.

The main objective of this paper is to propagate relationship between life skills and students' psychological development which ultimately leads to personal efficacy and success in life.Incorporation of life-skills program into curriculum of Indian education system has significant impact on development of student's personal and social capabilities. This is an exploratory paper, findings in this paper have important implications to educational policymakers, regarding integration of life skills into curriculum in order to influence students' professional and interpersonal skills.

Literature Review
Life skills empower people to be adaptable, engage with the environment, and encourage autonomy. Core competencies, known as personal and social skills, are a variety of intellectual, social, personal, and emotional abilities essential for development of deep learning and lifelong learning. Those with life skills are more able to adapt, interact with their surroundings, and promote self-control. The World Health Organization (WHO) provides a variety of skills as a list they are effective communication skills, interpersonal relationships, empathy, decision-making, problem-solving skills, critical thinking skills, and self-awareness; It has been observed that these skills are attainable and manageable. They aid people in overcoming social difficulties such as sadness, anxiety, loneliness, rejection, rage, and conflict (Greco, Baer, & Smith, 2011). Many researchers have focused on the exploration of these issues (Sobhi-gharamaleki & Rajabi, 2010). Smith (2004) performed research with 500 active participants to determine the impact of instruction in life skills on pupils. Findings suggested that training in life skills improved mental, physical health of participants and had a substantial impact on management and leadership abilities of adolescents. Instruction on life skills thought students the abilities to manage negative emotions such as failure, anxiety, depression, and stress.

According to research conducted by Smith (2011) training in life skills dramatically reduced alcohol and drug usage among students. According to Sukhodolsky's (2004) research, training in coping skills or soft skills has a good effect on interpersonal interactions and behavioral issues; hostility also decreases significantly among participants (Sukhodolsky, Kassinove, & Gorman, 2017). In addition, Mishara and Ystgaard (2006) students who learned how to handle stress were happier and, as a result, felt less pressure throughout their studies (Naseri & Babakhani, 2014)

According to Willingham (2007), from a psychological standpoint, life skills are fundamentally connected with domain knowledge; hence, they are very discipline-specific (Lai, 2011). Nonetheless, it demonstrates the requirement for a unique skill set for each subject and life skill.

According to Matsuda and Uchiyama (2006), they trained university students on problem-solving techniques through participating in group activities and found that teaching 'skill set' can guide them on how to deal with difficult circumstances and considerably increased students' personal and social capabilitie.As a result of training, Students learned to deal with distorted perception, inadequate emotional response, stereotypical behaviors.

According to Sagone & Indiana (2017), life skills are psycho-social and interpersonal skills help people make informed decisions (decision-making), solve problems (problem-solving), think critically and creatively (critical and creative thinking), communicate effectively (efficacy communication), build healthy relationships (interpersonal relationships), get involved with others (empathy), know themselves, recognize feelings as irrational (self-awareness), and get involved with others (interpersonal relationships)" (2017, p. 2229).

De Caroli and Sagone (2014) examined kinship between generalized self-efficacy and psychological well-being in a sample of highly and low efficient Italian adolescents and observed a significant and positive relationship between self-efficacy, personal development, and self-acceptance.

Therefore, this study intents to analyse the impact of life skills training program on students' growth in academic achievement and social competency skills.

Life Skills And Psychological Development Of Students
Counseling psychology has been concerned with promoting development and competence since at least the mid-1970s when Super (1977) outlined distinctions between counseling and clinical psychology as the difference between education and medicine. Positive psychology (Seligman & Csikszentmihalyi, 2000; Sheldon & Ryan, 2011) has increased interest in strength-based methods. The Life Development Intervention model (LDI; Danish & D'Augelli, 1983; Danish, D'Augelli, & Ginsberg, 1984), defines counseling psychology into one frame, based on the life span of human development.

Life Development Intervention (LDI; Danish & D'Augelli, 1983; Danish, D'Augelli, & Ginsberg, 1984), emphasizes on self-directed transformation and concentrating on future, with a grasp of what has to be done in the present to achieve one's best potential future. Yet, LDI is more than just a conceptual framework for understanding process of positive transformation; it also outlines an intervention technique based on a psycho-educational approach. This method is a skills-based education model that promotes positive growth, particular purpose of LDI is to enhance chances of success by improving personal ability via teaching life skills (LS) (Danish & Forneris, 2008). The major implication of this paper is to enhance ,extend the need for LS interventions in the psychology development of students.

Danish, Forneris, Hodge, and Heke (2004) described life skills, as the abilities that allow people to succeed in many situations in which they live, such as school, home, and communities. Life skills may be behavioral (communicating successfully with peers and adults) or cognitive (making sound judgments); interpersonal (being assertive) .

LDI is based on a life-span human development perspective, it emphasizes on progressive growth and alteration (Danish & D'Augelli, 1983). Since change is sequential, it is necessary to consider any period of life within the context of what has happened in the past and what will happen in future. As change occurs in one's life, it may result in problems or crises, but the results are not necessarily negative. It is during these life "changes" that life skills(LS) programs focused on autonomy, competence, and relatedness can be the most effective.

Basic Elements Of Life Skills
Life skills are the qualities, diverse learning elements which include knowledge , understanding, skills, aptitudes and values that allow people to face the obstacles of daily life with a positive attitude and to carry out their daily challenges effectively. These are intrinsic, essential abilities that enable us to tackle the challenges we face every day. Life skills are the collection of mental and practical aptitudes that help us to deal with the ups and downs of daily living, and fulfill our tasks with grace and poise. These abilities are bedrock of our being and are what enable us to deal with the challenges we face every day. They include self-assurance, assertiveness, capacity to make wise judgments, ability to effectively navigate the demands and obstacles of everyday life. Teaching and learning life skills can be a comprehensive approach to behavior modification that focuses on the development of life skills such as communication, goal setting, positive attitude, managing emotions, stress management, interpersonal skills, creativity, problem-solving, decision making, leadership skills, team spirit, peer pressure resistance, relationship skills, and adding new values to behavior. Life skills include psycho-social competitive and interpersonal skills that help people make informed discussions solve

problems, think critically and creatively. These life skills are innumerable in number and they are required from womb to tomb. They differ across time, culture, resources, and setting. World Health Organization (WHO - 1999) is aimed at development of psycho social skills that are required to deal with the demands and challenges of everyday life.

According to WHO, the core set of life skills can be divided into three kinds
1.   Cognative skills
2.   Emotional skills
3.   Social skills.

Cognitive	Emotional	Social
Creativity, Critical thinking, Problem-solving Decision Making	Coping with emotions Empathy Coping with stress of daily life Self awarness	Effective communication Interpersonal skills

Table 1 : Core set of life skills categories

Although these three pillars of competence have such a broad influence on everyday life, each of it include a vast array of specialized skills. Each skill in detail discussed below.
1.   Critical thinking is an ability to think, analyze information, experience in an objective way in order to understand the logical connection between ideas. It helps to Identify, and construct evaluate an argument on reflection of one's own beliefs and values. critical thinking can contribute to health by helping us to recognize and assist factors that influence attitudes and behaviors.
2.   Creative thinking is a new way of looking at things or doing with characteristic of four components, fluency, flexibility, originality and elaboration. Creative thinking is ability to look at things differently and find new ways of solving problem.
3.   Problem solving involves specific process of defining problem, determining the root cause of the problem, and implementing the best solution. It helps us to deal constructively with every problems in our lives, problems that are left unresolved can cause mental stress and give rise to accompanying physical strength.
4.   Decision making is the selection of a appropriate solution from among two or more possible alternatives to arrive at a solution to a problem. It helps us deal constructively with decisions about our lives. It can teach people how to actively make decisions about their actions.
5.   In a healthy assessment of different options and what effects these different decisions are likely to have, self-awareness includes recognition of one's own strengths and weaknesses, desires, and dislikes. Developing self-awareness can help us recognize and introspect when we are stressed or under pressure. It is often a prerequisite for effective communication and interpersonal relationships, as well as for developing empathy for others.
6.   Empathy is necessary to have a successful relationship with people around us and society at large extent. We need to understand and care about other people's needs, desires, and feelings. Empathy is the ability to imagine what life is like for another person. Without this quality of empathy, our communication with others will amount to one-way traffic. Empathy can help behavior towards people in need of care, assistance, or tolerance.
7.   Coping with emotions means recognizing emotions in ourselves and others. Being aware of how emotions influence behaviour and being able to respond to emotions appropriately. Intense emotions like anger or sadness can have negative effects on our health if we do not respond appropriately.
8.   Coping with stress means recognizing the sources of stress in our lives, recognizing how stress can affect and effect us, and acts in ways that help us control our levels of stress by changing our environment or lifestyle and learning how to relax.
9.   Communication skills are that able us to express ourselves effectively both verbally and non-verbally in ways that are appropriate to our cultures and situations. This means being able to express opinions and desires, as well as needs and fears, and it may mean being able to ask for advice and help in a time of need.

10.   Interpersonal relationships help us relate in positive ways with the people we interact with. This may mean being able to make and keep friendly relationships, which can be of great importance to our mental and social well-being. It means keeping good relationships with family members, able to end relationships constructively which are an important source of social support.
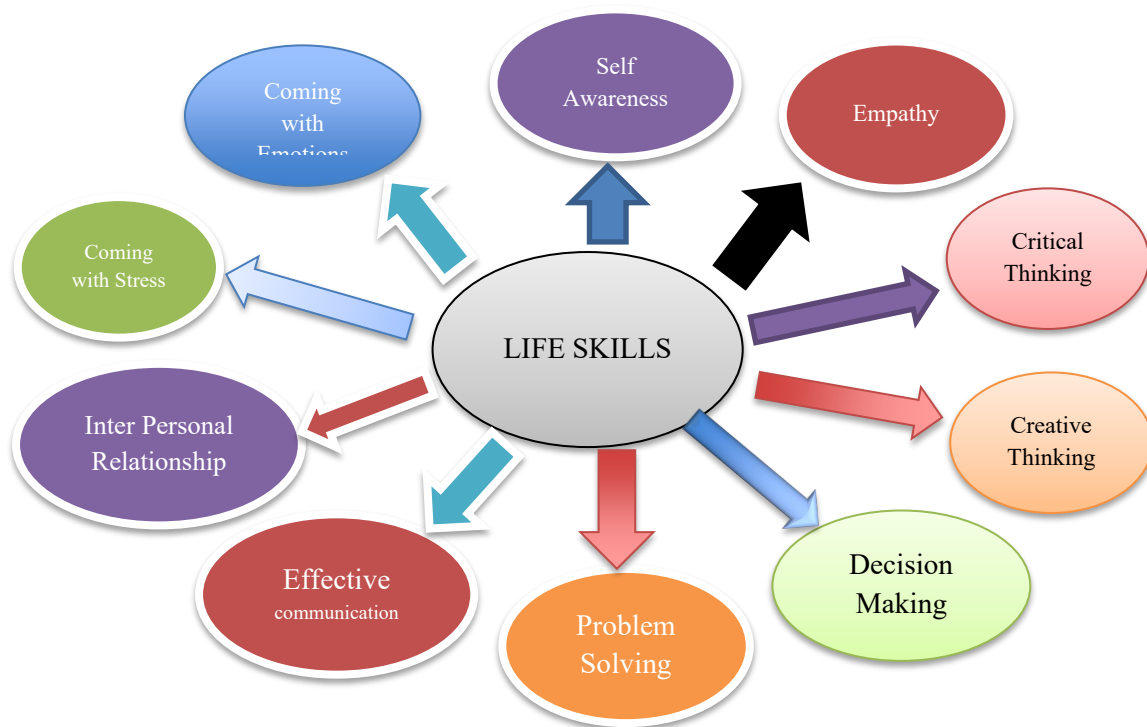
Fig 1: Lifeskills

Life Skills In Education
Now the problem is how and why we should teach life skills. Our education system is kind of informative and knowledge-based, skill sets are not taught. Moreover, our nuclear family system has left no scope for getting exposure to life skills. Post-covid teaching has affected the life skills and mindsets of young students. Technically students are getting bright but their skills are zero. Students are gathering information from technology but do not have skills to process it in their everyday progress. Especially students from polytechnic institutions are lacking these life skills.

Life skills training is an effective strategy in inspiring youth to act responsibly, take initiative, and take charge. It is predicated on the premise that when young people are able to rise above the emotional impasses caused by their daily conflicts, entangled relationships, and peer pressure, they, are less likely to engage in antisocial or high-risk behavior. However, the age range predominantly from 10 to 18, all children and adolescents must teach life skills in a nurturing learning environment. Children and adolescents are the target group because this age group appears to be the most susceptible to drastic and wild behavior changes. Youth, especially technical students in vocational education, can only acquire these skills if they are able to learn , practice life skills in a peer- and family-supported environment that fosters self-assurance in their daily lives. Education in life skills provide a framework and methodology for children to participate in a variety of societal events and facilitates their participation. Life skills training is an effective tool for empowering youth to act responsibly, take initiative, and take control.

Life skills are imparted in a supportive learning environment for children and adolescents of all ages. However, fostering life skills of emotional intelligence goes beyond academics and into the area of psychological welfare by teaching pupils' interpersonal skills, resilience, and stress management. Emotional intelligence, therefore, could be viewed as a skill-set of primary importance within the life skill competencies, as it covers both factors of success and personal development, including academic achievement, employment, and relationships. Hence, emotional intelligence might be seen as a talent of main relevance within the life skill competencies because it encompasses both success and personal development variables, such as academic accomplishment, employment, and relationships. Emotional intelligence aids people in overcoming adversity and problems in a variety of life domains and is an essential component of any life skills program. Including components of these life skills in

the curriculum is strongly recommended. It is stated that educators have a duty to assist students in building personal efficacy in connection to their everyday lives and particular beneficial qualities. Even if the primary goal of education is to prepare students for professional roles this research presented improves students' professional readiness which is possible only if one can bridge gap between skill sets required in the workplace and in academia by providing a platform for students to broaden their own personal efficacy on how they manage their emotional intelligence to advance their personal and social competency, a factor that leads to academic and professional success. Educators have responsibility in helping students develop personal efficacy in relation to their daily lives and their individual personality traits.

How Are These Life Skills Imparted?

Unfortunately, there is no course that could teach life skills in detail. Since majority of approaches used in life skills are based on social learning theory and what we know about how young people learn from their surroundings. Observing how others behave and reflections of their actions. Teaching life skills involves the process using four basic components.

1. Practical activities
2. feed back and reflections
3. Consolidation and reinforcement
4. Practical application to day to day life challenges.
5. Peer educators approach

Different methods that can be used to enhance life skills in students, most effective form of learning life skill in education are active learning (learning by doing), interactive, relevant, critical and collaborative.

- ❖ Active learning - emphasize learning by doing
- ❖ Interactive - uses discussion and debate
- ❖ Relevant - focuses on real life issues facing young people and society
- ❖ Critical - encourages young people to think for themselves
- ❖ Collaborative - includes group work and collaborative learning

Conclusion

The purpose of this paper is to strengthen and expand conceptual framework for LS interventions beyond lifespan development intervention framework (Danish & D'Augelli, 1983). Nevertheless, development of life skills of emotional intelligence extends beyond the realm of academics and into the domain of psychological health. Emotional intelligence is an essential component of any programme that teaches life skills, and it is the responsibility of educators to assist students in development of personal efficacy in relation to both the aspects of their personalities that make up their daily lives and the aspects of their lives that are unique to them. Bridging gap between the skill-sets required in the workplace and in academia has been shown to improve students' professional readiness. It has also been proven that giving students a place to develop a sense of mastery over their emotional intelligence through life skills and social competence leads to greater professional preparedness.

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COMPUTER INTEGRATED MODULE ON ACQUISITION OF GRAMMAR SKILLS OF THE CHILDREN WITH LEARNING DIFFICULTIES

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ABSTRACT
The main objective of this experimental study, according to the investigators, was to determine how a computer-integrated module affected the development of grammar abilities in young learners. In this study, 20 students with learning disabilities enrolled in regular 8th grade were given the JC Raven IQ test to determine their level of intellect. The three stages of the research design are sample selection, word selection, accomplishment test creation, and experimentation. Two Group pre-test-post-test was used by researchers. GCIM module was used by the experimenter to introduce the treatment. A t-test and descriptive statistics were used to analyse the data. The outcomes showed that the average achievement scores on the module following the treatment were statistically and significantly high. On the acquisition of the grammatical skill by GCIM, mean score of experimental group was higher than mean score of control group. This approach can be used as assistance by school administrators to help students who struggle with learning grammar.
Keywords: Computer Integrated Module, Learning Difficulties, Grammar skill

Introduction

"Education is a conscious purpose to train children to fulfil adult life responsibilities. Since children have to enter a complicated society when they grow into adults, education gives them training for their adult life"(Kim, 2006). When confronted with urgent issues at home, in their community, or in the wider world, they are better equipped to handle them thanks to the development of their thinking and reasoning abilities. To learn how to lead a moral or orderly life, a person needs to understand how to utilise reason. "True education means training the individual to discriminate between 'good and evil', both on the level of physical responses as well as mental responses" (Schonert, 2007).

The primary distinction between learning a first language and a second language is that the first needs deliberate effort on the part of the student, whereas the second language is learnt naturally. Each person uses a different approach and strategy when performing a given work. The method employed by a learner to complete the task at hand is now referred to as a strategy. Although early research centred on identifying the tactics employed by successful language learners, it gradually moved into more intense research on a number of other LLS-related topics.

"In most schools, colleges, and universities the education is in the English language. For understanding the books, lectures, and assignments it's necessary to learn the English language first. Most of the students want to go to foreign countries to study"(Adil, 2022). In other nations, it is exceedingly challenging to survive without knowing and using the English language. Learning English is therefore crucial for those who desire to pursue further education abroad. English is presently a worldwide used language. "Named after the Angles, one of the Germanic clans that relocated to England, it, at last, gets its name from the Anglia promontory in the Baltic Sea"(Arminus, 2015). English has become the most significant language around the globe which has an effect on each field of work. There are 104 nations where English is communicated in as a first language. More individuals need to gain proficiency with this language to improve their expert and scholastic lives.

Grammar Skill

Carlos (2018) professes that English is to be upheld as the second largest language which people use in the world and it is officially accepted in 70 countries. English is designated as the second language of India, where it is used for all academic purposes. The papers provide insights into English grammar skills and the effectiveness of teaching English grammar. Cerena 2021 emphasizes the importance of grammar in language skills and investigates the effectiveness of an English Grammar Course among B.Ed. student-teachers. Sahid 2019 explores the perceived impact of grammar competence on speaking ability among English literature students. However, Mariati 2019 does not provide specific findings related to English grammar skill optimization, and Fuchs 2012 focuses on the pedagogy and features of a grammar series rather than empirical research on grammar skill development.

At the primary level, the development of essential language acquisition skills—listening, speaking, reading, and writing—should continue. At the upper elementary level, we anticipate that students will create more diverse oral and written discourses. Grammar competence is a part of communicative ability. To build excellent communication skills, learners should concentrate on understanding and applying grammar. Learning English is crucial for anyone looking for work in today's competitive labour market because it is a language that is almost universally spoken in the country. A few grammar-related questions are frequently posed in competitive exams.

T. C. Baruah (2004) in 'The English Teacher's Handbook' mentioned. 'English has been a significant part of our educational system and of national life for almost two centuries. English was a powerful unifying factor in our fight for independence. Leaders from all regions of our large nation could communicate and jot down their shared strategies using this language. Even today, English continues to play a crucial role as the national link language for interstate contact as well as the language of trade and commerce across the nation. Additionally, English has made a significant contribution to India's advancement of knowledge, particularly in the fields of science and technology. It has helped us fully understand the state of the world by bringing it home to us'. Chandra et al. (2001) pointed out that in order to meet the communication needs of the fast-growing world today, more and more people are looking for highly specific, academic and professional alternatives to improve their language skills, where grammar holds a prominent position.

Computer Integrated Module

A computer-integrated module (CIM) is a type of manufacturing system that uses computers to control and coordinate the various components of the manufacturing process. It typically includes a combination of hardware and software components, such as programmable logic controllers, robots, sensors, and computer-aided design and manufacturing software. The goal of a CIM system is to improve efficiency, reduce costs, and increase flexibility in the manufacturing process. Students today are living in a digital world where everything they do depends on the internet, text messaging, social media platforms, and other multimedia tools. Additionally, students use these digital skills in their daily lives away from school, and they anticipate an equivalent level of technology access in their academic life. Presently every country understands the importance of ICT and focuses on mastering the basic skills of ICT along with the core academic subjects, reading, writing and numeracy (Meenakshi, 2013). The digital world makes learning more fun and interesting. Here, technology plays an important role in creating innovation and motivation for the learners (Jayanthi and Kumar, 2016). Moreover, a research finding by Omondi, et al (2014) on, "Embedding ICT in ESL Teachers' Professional Development (TDP)."shown that teachers may function within new and modern educational trends thanks to the integration of ICT into English language TDP procedures at both the personal and institutional levels. On the other hand, a study by Rajeswari (2014) If instructors are given the time and access to relevant training to use computers to facilitate learning, technology has a significant impact on accomplishment.

Because technology has such a big impact on encouraging learners to be innovative and motivated, it is impossible to separate technology from English language teaching (Singhal, 1997). Furthermore, the American Council on the Teaching of Foreign Languages (ACTFL) (2012) recognises the potential of technology as a tool to assist and enhance classroom-based language learning and supports its use. Traditional methods of imparting higher education have become less motivating.

Computer integrated modules can be used to teach English grammar in the following ways:
1. Interactive Grammar Exercises: CIM can be used to create interactive grammar exercises that students can complete online. These exercises can include multiple-choice questions, fill-in-the-blanks, and matching exercises.

2. Grammar Games: CIM can be used to create grammar games that students can play online. These games can be designed to be fun and engaging while also reinforcing grammar concepts.

3. Virtual Grammar Lessons: CIM can be used to create virtual grammar lessons that students can access online. These lessons can include videos, animations, and interactive activities that help students understand and practice grammar concepts.

4. Automated Grammar Checks: CIM can be used to create automated grammar checks that students can use to check their writing for grammar errors. These checks can be integrated into word processing software or online writing platforms.

5. Personalized Grammar Feedback: CIM can be used to provide feedback to students based on their individual writing. This feedback can be generated using natural language processing and machine learning.

Children With Learning Difficulties
A learning difficulty is defined as "any mental condition that prevents a person from acquiring the same amount of knowledge as others in their age group" (ldrfa, 2012). When children begin classroom-based learning in reading and writing during their first two years of school, learning challenges and early indicators of learning disorders are frequently identified. The Learning Disabilities Association of America lists these specific learning difficulties as the following:

• **Dyslexia**
A language-processing condition called dyslexia has an effect on reading, writing, and understanding. Word decoding or phonemic awareness, or the ability to distinguish specific sounds within words, may be problematic for dyslexics.

• **Dysgraphia**
Dysgraphia causes people to have difficulty expressing their ideas through writing or drawing. Dysgraphia is characterised by poor handwriting, however this is by no means the sole sign. People who struggle with writing have trouble with spelling, grammar, vocabulary, critical thinking, or memory.

• **Dyscalculia**
Dyscalculia encompasses learning disabilities related to mathematical calculations. IndiviCalculation-related learning difficulties are referred to as dyscalculia. People with dyscalculia have difficulties with numbers, math, and logic.

• **Auditory processing disorder** (central auditory processing disorder)
Patients with Auditory processing disorder (APD) have trouble processing sounds. People with APD may have trouble distinguishing between various sounds, such as a teacher's voice vs background noise, or they may mistake the order of sounds.

• **Language processing disorder**
Language processing disorder, a subset of auditory processing disorder, develops when a person experiences particular difficulties in understanding spoken language, which affects both receptive and expressive language.

• **Nonverbal learning difficulties**
NVLD patients have difficulty reading nonverbal cues such as body language, tone of voice, and facial expressions.

• **Visual perceptual/visual motor deficit**
When reading, people with visual perceptual/visual motor deficiencies frequently lose their position, have poor hand-eye coordination, and have trouble using pencils, crayons, glue, scissors, and other fine motor skills.

Review Of Related Studies
Abraham et al..(2007) conducted a study on "The effects of Multimedia on second language vocabulary learning and reading comprehension". The present research looked at how 102 students taking intermediate-level Spanish lessons in their third semester used multimedia software to improve their vocabulary development and reading comprehension. The study specifically looked at the effects of annotations in the form of video photos, Study completed two spatial ability tests, an English verbal ability test, a pretest and posttest involving 20 Spanish words noted in the story for which they offered an English translation. Finally, learners in the choice-lookup and forced-lookup groups answered questions about the value of the multimedia annotations for comprehending the plot and acquiring new vocabulary.

Kim et al.. (2008) conducted a study titled "Effects of Text, Audio, and Graphic Aids in Multimedia Instruction for Vocabulary Learning". This study looks into how a Web-based self-instruction programme might help learners at Myungin Middle School in Seoul, South Korea, learn more English vocabulary. Multimedia elements like visual text, spoken text, and pictures are used. The 78 study included 172 middle school kids (aged 14) from five different courses. Instruction that included "visual text and added graphics" or "visual text, added spoken text, and added graphics" helped participants learn more effectively. The findings suggest that providing images that explain the vocabulary's meaning is an efficient strategy to enhance vocabulary learning in English.

Lubis et al., (2022) in their study entitled on "Incorporating Flipped Learning in Teaching English Grammar for EFL Students Across Proficiency Levels. " According to this study, flipped learning can improve students' English proficiency and study habits. However, there are still some issues, primarily the student's ignorance and demotivation as a result of the increasing workload that must be completed. Furthermore, there was a dearth of empirical data in the EFL context supporting the advantages of flipped learning across skill levels. This study describes how 94 first-semester undergraduate students at a private university in South Jakarta, Indonesia, were taught grammar through flipped learning. Three grammar exams (pre-, mid-, and post-tests) were given using a quantitative and qualitative approach to examine how flipped learning affected the students' grammar across all competency levels. The pupils were then given a survey with both closed- and open-ended questions. The quantitative findings showed that, across all competence levels, the students' grammar abilities improved from the mean pre-test to post-test score. Regardless of the students' level of English grammar ability, the qualitative results supported such a favourable impact because flipped learning might foster learner motivation, autonomy, and awareness. The difficulties of implementing flipped learning in an EFL grammar class were still characterised as limited vocabulary competence, difficulty to manage the time, ignorance, and technical difficulties.

Nutta (2001) carried out a study contrasting teacher-directed grammar training with computer-based grammar instruction.The findings demonstrated that, for all English proficiency levels, computer-based pupils considerably outperformed teacher-directed education on open-ended examinations covering the relevant structural elements. The outcomes show that teaching L2 grammar with computer-based education is a viable option.

Jayakumar et al., (2019) conducted a study on "Teaching English Grammar through Android Application to Teacher Trainees of Chennai District with reference to Verbs An Experimental Study". To enable the learner to understand grammatical aspects and semantic nuances so that he/she was able to make use of the appropriate structure in the appropriate situation or context. The best sample technique was chosen: judgmental sampling. 120 teacher candidates were examined in the verb and its clue categories for the study region, which was based on the Chennai district. They were thought of as representative samples for the investigation. This study, which included a pilot study, a pretest, a teaching intervention, and a posttest, was experimental in nature. Additionally, it has experimental and control group settings. Data were gathered via a questionnaire, which was also employed as a research instrument. This study looks into the mistakes made by the students in their pre-test responses, which also acted as the diagnostic test. The Android application helped with grammatical instruction. Finally, the post-test, which functioned as the accomplishment test, was used to evaluate the impact of the instructional intervention and the performance gap between the experimental group and the control group. The results of the study show that the customised Android app has been a successful pedagogical aid for enhancing the grammar knowledge of the teacher candidates in the Chennai region.

Kennedy et al. (2015) explored the impact of multimedia vocabulary instruction on learning-disabled adolescents. The experimental study's goal was to determine how employing content acquisition podcasts (CAPs) to teach adolescents with and without learning disabilities would affect both groups. 30 urban high school students who had LD in a reading-related area were assigned at random to one of four experimental settings, with training taking place over the course of three weeks at individual computer terminals.

Patel (2009) the following goals when conducting a study named "Development and Implementation of CAI to teach English grammar to standard VIII students in different modes": (i) Create the CAI to teach Standard VIII Gujarat Secondary and Higher Secondary Board (GS&HSEB) students English Grammar in various ways (using only the CAI, using the CAI with repetition, and using the CAI with discussion); (ii) Research the efficiency of the developed CAI in various ways in terms of students' English Grammar achievement. Findings: Students who received English Grammar instruction through CAI had much superior achievement than those who received traditional instruction. The style of teaching through CAI with discussion was shown to be significantly superior in contrast to the other two ways of presenting this CAI.

Scheid (2010) studied the impact of computer-assisted math instruction for learners with impairments. According to the results, math computer-assisted education can be a successful intervention for students with learning disabilities. It must be used wisely and with constant instructor contact in order to be most effective. When paired with other therapies, it is also beneficial. There are conflicting views and insufficient evidence to conclusively prove its efficacy. It is a tool that can help students with learning disabilities, but it is not always the answer to every problem.

Methodology
Objectives
The following are the objectives of the present study.
1. To enhance the English grammar skills of children with learning difficulties by dint of computer integrated module.
2. To make children comprehend the meanings of words and acquire grammar skills.
3. To develop the ability in recalling from visual memory.
4. To improve the ability to express ideas verbally from pictures.

Research design

TYPE	SOURCE
Variables	Dependent Variable - Grammarskill & Decoding Independent Variable - Computer Integrated Module
Tools used	a) JC Raven Test b) Gramcom Tool (Self made tool)
Sample	20 students of standard V of PUS, Alangulam
Validity	The GCIM(Grammar Computer Integrated Module) validated by experts. They made a suggestion, and it was implemented.
Treatment	GCIM Module
Durations of the Experiment	1 Months (1 hours a day)
Descriptive Analysis	t-test

Module Preparation
Based on their mental age, the investigators selected the content. The content is organised by the investigators from simple to complex. Then the subject matter was divided into smaller units and created a lesson plan using a computer-integrated module.

Tool Description
The investigators administered the Module and which consists of 3 Phases.

Phase I: Selection of Content
The investigators selected the content to enhance the grammar skills of children with learning difficulties.

Phase II: Framing the Units
The investigators framed the units in the module and made the scoring key to evaluate the performance of the children.

Phase III: Incorporating and integrating the Module
The investigators edited the module using a variety of editing programmes to integrate and include content with GCIM and synchronise it with an audio track. The reliability of GCIM was examined by specialists. They offered suggestions, and those corrections were made.

Data Collection Procedure
(i)   The investigators explained the purpose and details of the research and requested their cooperation in the research; the intelligence test and medical examination for ethical clearance certificate were conducted on the children with learning difficulties.
(ii)   The 10 children with learning difficulties received the treatment on Computer Integrated Module for 30 days. The researchers conducted the treatment session for 60 minutes per day.
(iii) The post-test was conducted after 1 month of treatment administered to the children.

Data Analysis
The data were analysed as follows:
(i)   Descriptive statistics- t-test.
(ii)   Compare the difference of means scores before and after receiving the treatment with GCIM.

Results
i)   PreTest Analysis
Ho1: There is no significant difference between the pre-test scores of control group and experimental group on the acquisition of the grammar skill of primary school children with learning difficulties.

Table 1. Difference between the pre-test scores of control and experimental groups on the acquisition of the grammar skill of primary school children with learning difficulties.

Test	Group	Mean	N	S.D	Calculated t value	Remarks
Pre - Test Grammarskill	Control	15.15	25	4.234		
	Experimental	17.15	25	4.320	1.864	NS

Not Significant at 0.05 Level

It is inferred from the above table (1) that, the t value is not significant at 0.05 level of significance. Hence, the null hypothesis was accepted. It showed that the students of control and experimental groups did not differ significantly at the pre test level.

ii)Post Test Analysis
Ho2: There is a significant difference between the post-test scores of control group and experimental group on the acquisition of the grammar skill of primary school children with learning difficulties.

Table 2. Difference between the post-test scores of control group and experimental group on the acquisition of the grammar skill of primary school children with learning difficulties.

Test	Group	Mean	N	S.D	Calculated t value	Remarks
Post - Test Grammarskill	Control	17.58	25	3.201		
	Experimental	21.42	25	3.320	3.415	S

S- Significant at 0.05 level

It is inferred from the above table (2) that, the t value is significant at 0.05 level of significance. Therefore, the null hypothesis was rejected. Hence, it can be said that the students of control and experimental groups differ significantly at the post test level.

ii) Pre Test – Post Test Analysis

Ho3: There is no significant difference between the pre-test and post-test scores of control group on the acquisition of the grammar skill of primary school children with learning difficulties.

Table 3. Difference between the mean scores of the Pre-Test and Post-Test scores of control group on the acquisition of the grammar skill of primary school children with learning difficulties.

Group	Test	Mean	N	S.D	Calculated t value	Remarks
Reading Control	Pre-test	15.15	25	4.234	2.755	S
	Post-test	17.50	25	3.301		

S- Significant at 0.05 level

It was inferred from the above table (3) that, the t value is significant at 0.05 level of significance. Therefore the null hypothesis is rejected. Hence it can be said that there is a significant difference between pretest and post test scores of control group students.

Ho4: There is no significant difference between the pre-test and post-test scores of experimental group on the acquisition of the grammar skill of primary school children with learning difficulties.

Table 4. Difference between the mean scores of the Pre-Test and Post-Test scores of experimental group on the acquisition of the grammar skill of primary school children with learning disabilities.

Group	Test	Mean	N	S.D	Calculated t value	Remarks
Reading Experimental	Pre-test	17.15	25	4.320	6.821	S
	Post-test	21.50	25	3.120		

S- Significant at 0.05 level

It was inferred from the above table (4) that, the t value is significant at 0.05 level of significance. Therefore the null hypothesis is rejected. Hence it can be said that there is a significant difference between pretest and post test scores of experimental group students.

Limitations Of This Study
(i) The study focused only on class 5th children with learning difficulties, the sample might not represent other classes.
(ii) The selected computer-integrated modules are limited.

Recommendations
Based on the current search results researcher recommends the Ministry of Education as follows:
•   The government can demand educational authorities and give them orders to check to see if all teachers use the lab every day for their innovative teaching.
•   NCERT may take sufficient measures to do a study on enhancing each student's English grammar abilities.
•   NCTE might demand that Teaching students with learning difficulties requires special basic training for teachers.
•   The teachers might consider using GCIM orientation as an alternative to improve the English grammar proficiency of students with learning disabilities.
•   The administration of the schools might encourage the instructors who work there to include technology in their lessons.
•   The study suggests that grammar instructors acquire the knowledge and skills necessary to use a variety of modern teaching tools, including computers, the internet, overhead projectors, and other audiovisual

equipment. The majority of instructional tools are of this type. To keep the students engaged in the learning process, these tools should be employed when teaching grammar.

• The researcher suggests that grammar instructors avoid grammar teaching in their mother tongues. They should aim to only utilise it in specific circumstances. It is advised that grammar instructors provide their students with plenty of opportunities to learn the language of teaching.

• To help teachers become more aware of current trends in grammar instruction, English departments should provide well-stocked libraries and enhance their access to the internet.

• It is highly recommended that overcrowded classes should be avoided. The schools should build new classes to remove such an obstacle which encounters in teaching at the primary level in general.

Conclusion

Children with learning difficulties benefitted greatly from the use of computer integrated modules to improve their grammatical abilities. Therefore, this study has clearly demonstrated how this computer integrated module may be used to help primary school students with learning disabilities excel in their knowledge of English grammar. The results show how the GCIM helped primary school students with learning disabilities improve their grammar skills between the Pre-test and Post-test. From an academic point of view, Computer Integrated Modules assisted grammar learning would serve as one of the recent areas in ELT (English Language Teaching) research. This study will pave the way for less instruction and more learning in the area of grammar, which will be advantageous for grammar students. The pedagogical suggestions made by this study can also be helpful for textbook and syllabus authors. According to this study, teaching English grammar to students using appropriate Computer Integrated Modules can be successful.

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DIGITAL LITERACY AND READING HABITS OF THE PONDICHERRY UNIVERSITY STUDENTS

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ABSTRACT
Digital literacy is the key to survival in this internet era, starting from clerical work to top notch jobs in multi-national companies' application of ICT in their daily routines has become inevitable and mandated for every job. Especially during the Covid-19 lockdown the student community faced a lot of hardships in accessing and utilizing the resources for their academics, hence this study was carried out to understand the digital competencies among the students as well as their reading styles, choices and preferences. The major objective is to understand the reading habits as well as the digital competency of the student and research scholars of Pondicherry University. For the said purpose a structured questionnaire was designed and distributed among the student and research scholars of Pondicherry University. The responses were coded and recorded in Excel for tabulation and analysis. The respondents are good with their skills related to computing and internet and Social media reported as the major source of information on new technologies for them. They agreed that the better Digital literacy could pave way for a paperless society.

Introduction

The fast growth and spread of Information and Communication Technology (ICT) into industries including education, business, health, agriculture, and so on has changed society. A multiplicity of digital information may confound information consumers and access and analyzing information has become increasingly challenging. In the digital age, it is essential to improve digital literacy. There has been an explosion of information since globalization first entered the field of education. And it is calculated that the number of Internet users in the population is more than 66.2 percent. Since 2000, Internet users have increased by 1,355 percent during the last two decades. In India, 47% of people had access to the internet as of the beginning of 2022. Also, In India, net customers increased by 34 million (+5.3 percent) between 2021 and 2022, according to a Kepios study (Data Reportal, 2022). As a result of this increase, cyber cafes and internet parlous have expanded across India, offering services that are both easily accessible and reasonably priced. Due to the Covid lockdown, all the work was being done online and students suffered a lot due to this unexpected but inevitable transformation in the mode of online education. The online learning model is still becoming more and more popular as more tertiary institutions strive to provide students with modern, flexible educational opportunities as well as interactive digital learning experiences found in successful and engaging virtual classes for undergraduate and postgraduate education (Mery & Newby, 2014). It is extremely difficult to give large groups of students an interactive learning experience while also keeping in mind that attempts to raise the caliber of pedagogy at tertiary institutions have acted as the primary impetus for revisiting focused teaching strategies in higher education (Hornsby & Osman, 2014). The need for new educational initiatives that would meet the needs of fostering capacities for effective use of and comprehension of digital technology as a cornerstone for lifelong learning was pressing, and the educational institutions were under pressure to offer them (Shopova, 2014). Stated that the level of competence needed to access electronic database resources is higher than the level needed to search printed sources and that students must develop specific abilities to take advantage of and use the expanding range of e-resources. To increase their comfort in using electronic databases at the library, they must have a strong understanding of digital literacy (Adeoye and Adeoye, 2017). Having a broad range of practises and cultural materials at your disposal for digital instruments is a sign of being digitally literate. It is the ability to

successfully create, cooperate, and communicate while being aware of how and when digital tools may support these pursuits the most (Ekenna and Iyabo, 2013). There has been a lot of scientific research in the area of digital literacy, but only a few papers have focused on digital literacy skills among university students. So, in this paper, we will focus on digital literacy skills and digital reading habits among university students.

Literature Review

"Digital literacy is a set of abilities and skills that are necessary for everyone to do information-related tasks, such as how to find, access, understand, analyze, manage, create, communicate, save, and share information" (CILIP, 2018). "Digital literacy is the ability to understand and use information in multiple formats from a wide variety of sources when it is presented via computers and, particularly, through the medium of the Internet" (Gilster, 1997). Acquiring necessary digital literacy abilities is a necessity for extending access to ICT to increase the job market competitiveness of young people (Shopova, 2014; Hicks, 2013). A student has to have a wide range of sophisticated cognitive, physical, social, and emotional abilities to perform well in digital environments. These skills are referred to as "digital literacy," and they go beyond simply knowing how to utilize software or operate a digital device (Leahy & Wilson, 2014). Students in higher education, where self-directed learning is anticipated, must make sure that the data they use is reliable, accurate, and trustworthy (Trilling & Fadel, 2009). Digital literacy is the ability to access, manage, and use the internet, social media, and other online resources to function effectively in the knowledge economy. The degree of technology intelligence a person possesses completely determines their level of digital literacy (Varghese & Musthafa, 2022). These digital skills are crucial to developing a learning strategy in the contemporary educational environment since they also fuel learners' learning preferences (Trilling & Fadel, 2009, Varghese & Musthafa, 2021) and has proved to have an positive influence on their academic performance (Yustika, 2020). To access, manage, and create knowledge, this skill entails the use of technology and communication networks. (CBSE, 2020). Therefore, fostering critical thinking, creativity, and innovation must be a major component of the curricula for higher education in the twenty-first century. This is accomplished in educational settings that emphasize collaboration and teamwork while also including communication, information, and media literacy abilities (Kay & Greenhill, 2011; Pushpanadham & Chirumamilla 2017). There have been several challenges in the modern period with relation to information identification, access, use, and assessment. When carrying out their responsibilities, researchers, students, and other readers must contend with several challenges to ensure the accurate and legitimate use of information and information resources (Safdar & Idrees, 2021). Moreover Digital Literacy is the only mean by which the individuals can identify and differentiate misinformation and disinformation (Subaveerapandiyan, 2021). To tackle these issues, it is thought that students need to have a strong understanding of information literacy (Schiffl, 2020). The qualitative investigation revealed that although students with Visual Impaired demonstrated fundamental digital literacy skills, they have difficulties producing digital material, evaluating essential information, and cooperating with others. (Arslantas, T.K., Gul, A.2022). Digital reading has a significant influence on college students' reading habits. However, due to its numerous drawbacks, such as shallow thinking, a lack of critical awareness, and a lack of inventiveness, it is best described as "shallow reading." Previous research has demonstrated a substantial inverse relationship between people's cognitive function and the amount of time they spend reading on digital devices (Hao, 2019).

Objectives

1. To examine the digital literacy among the research scholars and student community.
2. To assess the level of digital literacy skills.
3. To know the digital reading habits.
4. To examine the level of digital applications of software by students.

Profile Of The University And Library

Pondicherry University is a public-funded central university in Puducherry, India, which was established in 1985. It has been ranked among the top institutions by NIRF and has earned the NAAC's "Grade A" designation. The university is well-known for its professional programs. This core institution is well known for its research-based curriculum. The university library is renowned for its excellent infrastructure and proactive services which includes but not limited to fully air-conditioned reading halls, disabled-friendly floors, Wi-Fi accessibility, and services for the Visually Challenged. With RFID technology and 24/7 remote access to a collection of 5.66 lakhs, the library has carved out a niche for itself at the national level.

Methodology

The study is limited to students of Pondicherry University's main campus only, the campuses at Karaikal and Andaman Islands are excluded, and all Undergraduate, Post Graduate, and Ph.D. Scholars were considered. The sample consists of 162 randomly selected respondents from Pondicherry University. Subaveerapandiyan (2021) study constructs were untiled and a questionnaire was developed and the same was issued through random

sampling method both in person and through online. The data were collected regarding various dimensions of Digital Literacy and Reading habits among respondents through options on the Likert 5-point scale.

Findings

The profiling of the respondents is presented for better understanding in Table 1.

Type	Division	Frequency	Percentage
Gender	Female	98	60.5
	Male	64	39.5
Age Groups	16-20	4	2.5
	21-25	80	50.6
	26-30	62	38.3
	30 and above	14	8.6
Nature of Location	Rural	56	34.6
	Semi-Urban	57	35.2
	Urban	49	30.2
Stream of study	Humanities and Social Sciences	**77**	47.5
	Management and Commerce	19	11.7
	Life Science and Science	52	32.1
	Mathematics and IT	14	8.7
Educational Status	Integrated UG/PG	15	9.3
	Post Graduate	75	46.3
	Ph.D.	72	44.44
School experiences digital literacy	Yes	87	53.7
	No	75	46.3
College experience digital literacy	Yes	127	78.4
	No	35	21.6
Total		**162**	**100**

Table - 1: Demographic profile of Respondents

More females (60.5%) responded to this survey compared to males (39.5%). More than 50 percent of the respondents were in the age group 21-25 years. An almost equal number of responses were received from respondents from Rural, Urban and Semi-urban regions. A majority of 47.5 percent are from Humanities and Social Sciences, followed by 32.1 percent from Life Science and Science and the least (11.7% and 8.7%) are from Management and Commerce, and Mathematics and IT respectively. A maximum of 46.3 percent of respondents are Postgraduate students, closely followed by 44.4 percent of Research Scholars and 9.3 percent of respondents from Five-year Integrated programs; and also 53.7 percent of students got experience with digitization during school time, and 78.4 percent of respondents got experience with digitization during college time.
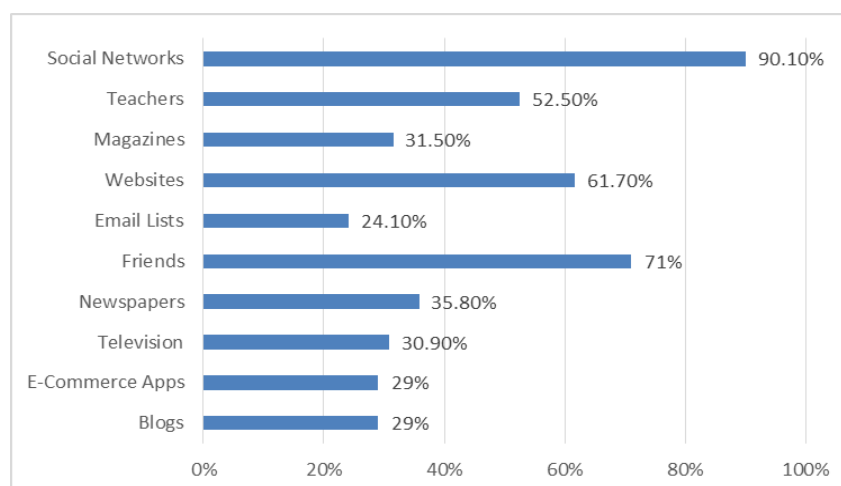
Figure - 1: Sources of information on New Technologies

The above figure reveals that 90.10 percent of respondents get to know about new technologies via social networks, followed by 71 percent from friends, and 61.70 percent from websites.

Digital Literacy Skills	Very Good	Good	Acceptable	Poor	Very Poor
Typing Skills	31(19.14%)	82(50.62%)	44(27.16%)	5(3.08%)	0
Web Search	49(30.25%)	78(48.15%)	35(21.6%)	0	0
Computer Literacy	41(25.30%)	79(48.77%)	36(22.23%)	5(3.08%)	1(.62%)
Internet Literacy	49(30.24%)	88(54.33%)	22(13.58%)	2(1.23%)	1(.62%)
Digital Literacy	36(22.23%)	83(51.24%)	35(21.6%)	6(3.70%)	2(1.23%)

Table - 2: Self-rating of Literacy Skills by respondents

Self-ratings of literacy skills were reported in Table 2. The majority of respondents (50.62 %) are competent at typing and 48.15 percent had good web search abilities, and 48.77 percent reported their computing abilities as good. A majority of 54.33 percent of respondents had strong internet literacy. The capacity to use digital technology is referred to as digital literacy. In terms of digital literacy abilities, 51.24 percent of respondents reported themselves as good at it.

Digital literacy skills	Yes	No
Do you understand the basic functions of computer hardware components?	148 (91.36%)	14 (8.64%)
Do you use keyboard shortcuts?	139 (86.42%)	22 (13.58%)
Do you use the computer for learning purposes?	148 (91.36%)	14 (8.64%)
Do you use social networking services?	152 (93.83%)	10 (6.17%)
Do you have mobile apps for language learning installed in your mobile?	108 (66.67%)	54 (33.33%)
Can you create and update web pages?	44 (27.16%)	117 (72.84%)

Table - 3: Digital Literacy Skills

The results in table 3 demonstrate digital literacy skills. The majority of (91.36%) respondents understand the fundamental functions of computer hardware components. Similarly, 86.42 percent know to use keyboard shortcuts. While 91.36 percent of respondents do use the computer for learning purposes 8.64 percent did not know how to make use of it for the said purpose. 93.83 percent used social networking services and 6.17 percent did not; while 66.67 percent used language learning apps remaining 33.33 percent never used it; 27.16 percent were aware of creating and updating web pages and 72.84 percent were not.

Digital applications	Very Frequently	Frequently	Occasionally	Rarely	Never
Email	57.41%	20.37%	14.82%	6.17%	1.23%
World Wide Web	61.11%	19.14%	10.49%	4.94%	4.32%
Database	14.82%	32.10%	29.01%	15.43%	8.64%
Spreadsheet (for Data Organization)	12.96%	19.75%	37.04%	21.61%	8.64%
Language Learning Mobile App	7.40%	14.20%	35.19%	34.57%	8.64%
Blog	8.64%	16.05%	25.93%	33.95%	15.43%
Text Chatting	46.30%	22.23%	14.81%	12.96%	3.70%
Voice Calling	48.15%	24.69%	15.43%	8.64%	3.09%
Video conferencing	29.63%	32.10%	22.84%	13.58%	1.85%
Electronic dictionary	28.40%	26.54%	27.16%	9.87%	8.03%

Table - 4: Frequency of using digital applications

The respondents' frequency of use of the digital environment was elicited in Table 4. Email was used by 57.41 percent of respondents very frequently, 61.11 percent used the internet very frequently, databases were occasionally used among 29.01 percent of respondents and spreadsheets were used occasionally by 37.04 percent of respondents. 35.19 percent of those surveyed reported occasionally using language learning mobile applications, 46.30 percent of respondents said they used text messaging very frequently, while 33.95 percent said they blogged rarely. Voice calling was very frequently favored by 48.15 percent of respondents. 32.10

percent of respondents said they utilized video conferencing frequently, and 28.40 percent of those surveyed said they very frequently used an electronic dictionary.

Digital Application Skills	Do not Know	Poor	Acceptable	Good	Very Good
Word Processing	6%	2.47%	29.01%	37.66%	25.30%
Spreadsheet	4.33%	15.43%	29.62%	37.03%	13.59%
Database	18.52%	21.60%	32.10%	20.37%	7.41%
Presentation	4.33%	6.17%	25.92%	36.42%	27.16%
Communication	6.79 %	11.12%	33.95%	27.77%	20.37%
Social Networking	3.70%	4.33%	24.69%	29.01%	38.27%
Search Engines	3.08%	2.47%	13.59%	25.30%	55.56%

Table - 5: Self Rating of expertise in using digital applications

Table 5 shows self-assessment of proficiency in using digital applications. The majority of 37.66 percent of respondents said to be good at word processing software. 37.03 percent are good at spreadsheet apps, and 32.10 percent said that their proficiency in using database applications is acceptable. 36.42 percent of respondents reported their knowledge as Good in presentation applications. 33.95 percent of responders reported their knowledge as Acceptable in communication apps; 38.27 percent of respondents reported that their knowledge and application of social networking services skills as very good. Similarly, 55.56 percent of respondents rated themselves as very good in the use of search engines.

Digital devises Usage	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
Enjoy using digital devices	31.49%	59.87%	6.17%	0.62%	1.85%
Feel comfortable using digital devices	26.54%	61.12%	9.26%	1.23%	1.85%
Aware of various types of digital devices	26.54%	59.26%	9.88%	2.47%	1.85%
Understand what digital literacy is	23.46%	61.12%	12.34%	1.85%	1.23%
Willing to learn more about digital technologies.	43.21%	46.30%	8.64%	0.62%	1.23%
It is important for me to improve my digital fluency	46.30%	43.83%	8.02%	0.62%	1.23%
My learning can be enhanced by using digital tools and resources	46.92%	43.83%	6.79%	1.23%	1.23%
Training in technology-enhanced language learning should be included in language education programs.	44.45%	43.83%	9.87%	0.62%	1.23%

Table - 6: Digital Devices usage

Table 6 shows how users interact with and value their digital devices/gadgets. The overwhelming majority of respondents (59.87 %) agree that they enjoy and like using digital devices. 61.12 percent of respondents agree that they felt comfortable using digital devices. 59.26 percent agreed that they were aware of various digital devices. 61.12 percent agree to be knowledgeable about digital literacy and skills. 46.30 percent agree that they are willing to learn about digital technology. A majority of 46.30 percent respondents strongly agreed that having digital fluency is essential for improving oneself. 46.92 percent strongly agree for adopting digital tools and resources might enhance their digital learning. 44.45 percent of respondents said they strongly agreed that language education programs should include training in technologically enhanced languages.

Knowledge about Digital Tools	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I know how to use digital tools to find information.	19.13%	50%	18.52%	2.47%	9.88%
I know how to use digital tools to understand information.	19.13%	50%	16.67%	5.56%	8.64%
I know how to use digital tools to connect with others.	21.60%	50.62%	14.20%	7.41%	6.17%
I know how to use digital tools to work with others.	8.02%	3.71%	18.52%	50%	19.75%

I know how to use digital tools to create my work.	9.26%	6.17%	17.28%	46.92%	20.37%
I know how to use digital tools to share my work.	8.64 %	3.71%	17.90%	48.15%	21.60%
I understand what it means to be a responsible digital citizen.	7.41%	8.02%	22.23%	41.36%	20.98%

Table - 7: Knowledge about Digital Tools

Table 7 shows the knowledge regarding digital tools. Half the respondents agreed that they know how to utilize digital tools to discover new information, again 50 percent of respondents agree that they are familiar with using digital tools to interpret information. Knowing how to interact with others online is something that 50.62 percent of respondents agreed with, and 21.60 percent of respondents strongly agreed. Half of the respondents 50 percent disagreed that they can collaborate with others using digital technologies. 46.92 percent disagreed with this statement that they knew how to use digital technologies to do their work. 48.15 percent disagreed with the statement that they knew how to use digital technologies to share their work. 41.36 percent disagreed with the statement that they understand what it meant to be a responsible digital citizen, with 22.23 percent being in neutral mode.
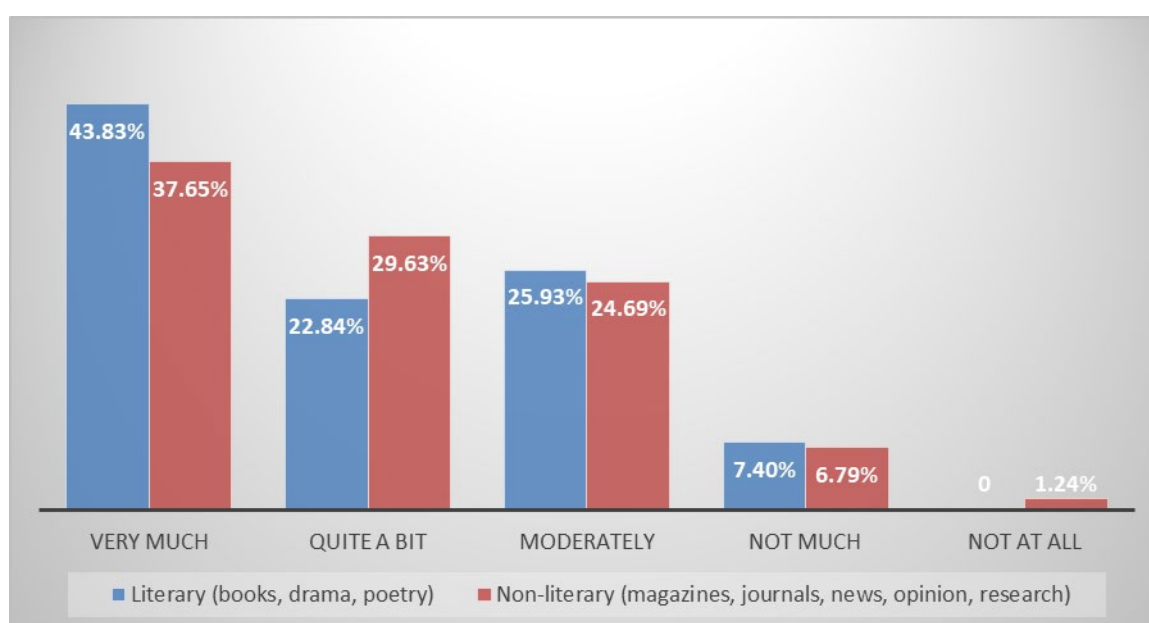
Figure - 2: Preference for Reading Literary and Non-literary works

Figure 2 shows preference of reading literary and non-literary books among respondents. 43.83 percent liked literary books very much, and 37.65 percent liked non-literary books very much. 25.93 percent moderately liked literary books and 24.69 percent moderately liked non-literary books.
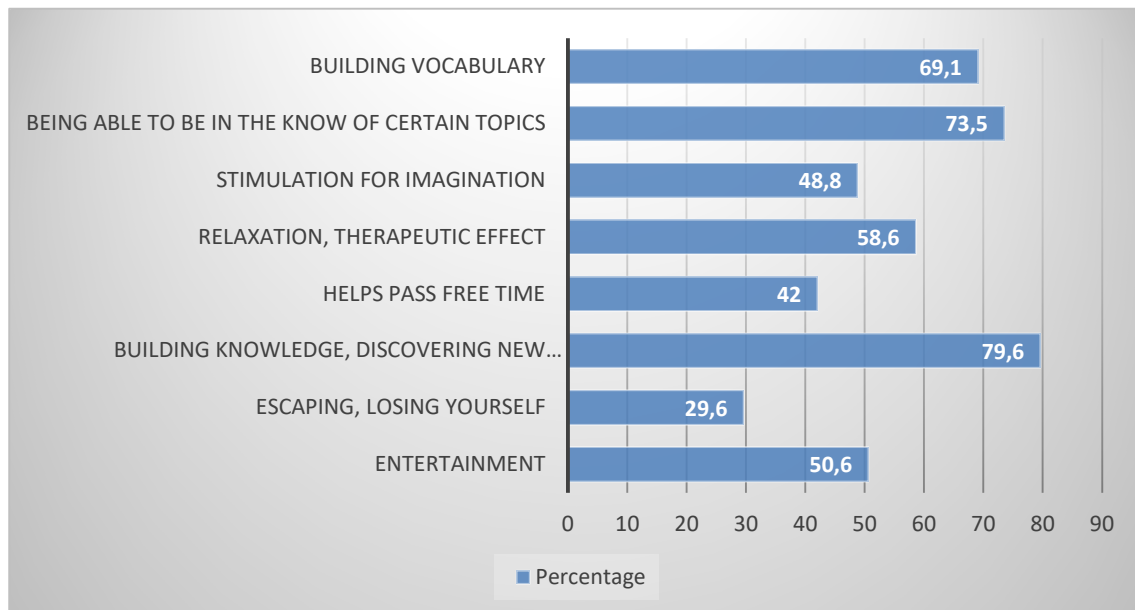
Figure - 3: Primary Reasons for Reading

Figure 3 shows the Primary Reasons for Reading. The overwhelming majority of 79.60 percent of respondents choose Building knowledge as the reason for reading, and discovering new information as the primary reason for their enjoyment of reading; 73.50 percent of respondents have chosen Being able to be in the know of certain topics.
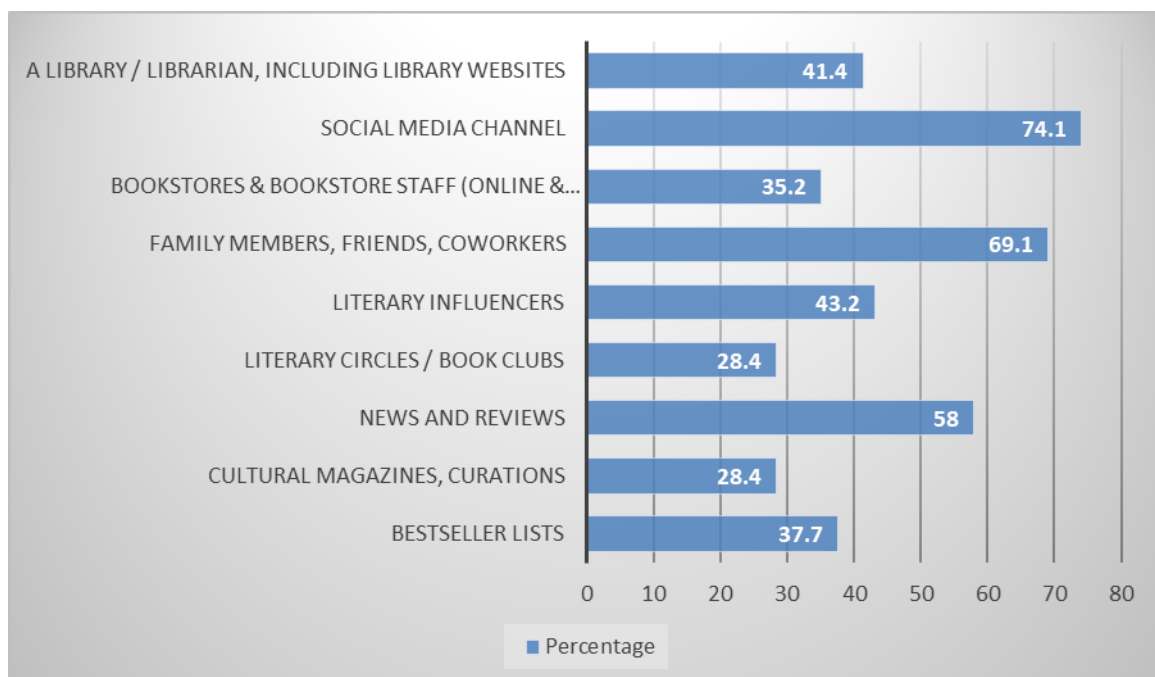
Figure - 4: Reading Recommendations

Figure 4 shows how recommendations for reading were given to them. The majority of 74.1 percent of respondents reported getting reading recommendations from social networking sites, while 69.1 percent reported getting them from friends, or family, 58 percent reported news and reviews, and 28.4 percent of respondents each reported literary circles/book clubs and cultural magazines, curations as sources for reading recommendations.
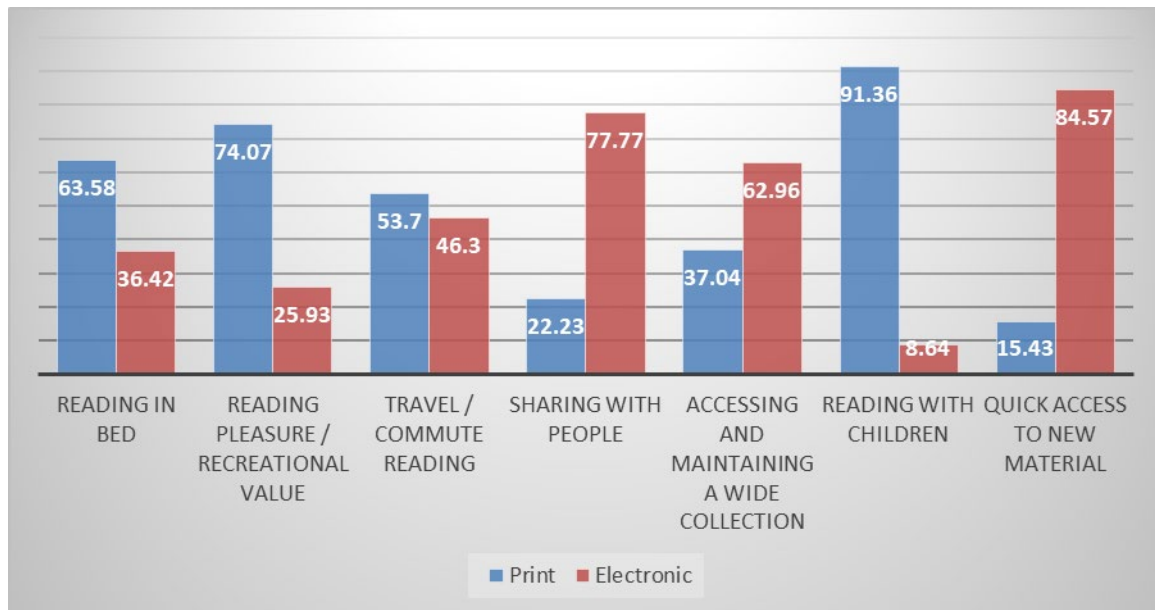
Figure - 5: Choices of Formats

Choices of formats of reading materials among respondents are shown in Figure 5. A majority (63.58%) of them preferred print format for reading in bed, and 74.07 percent preferred print formats for reading for pleasure and fun. 53.7 percent said they preferred print formats for reading during travel or commuting, and sharing with others in the preferred medium (electronic) recorded 77.77 percent of responses. Accessing and keeping up with a large library of books is possible in electronic format as reported by 62.96 percent of respondents, and 91.36 percent reported Print as a suitable format for reading with children. 72.6 percent of respondents said they prefer electronic formats for quick access to fresh information.
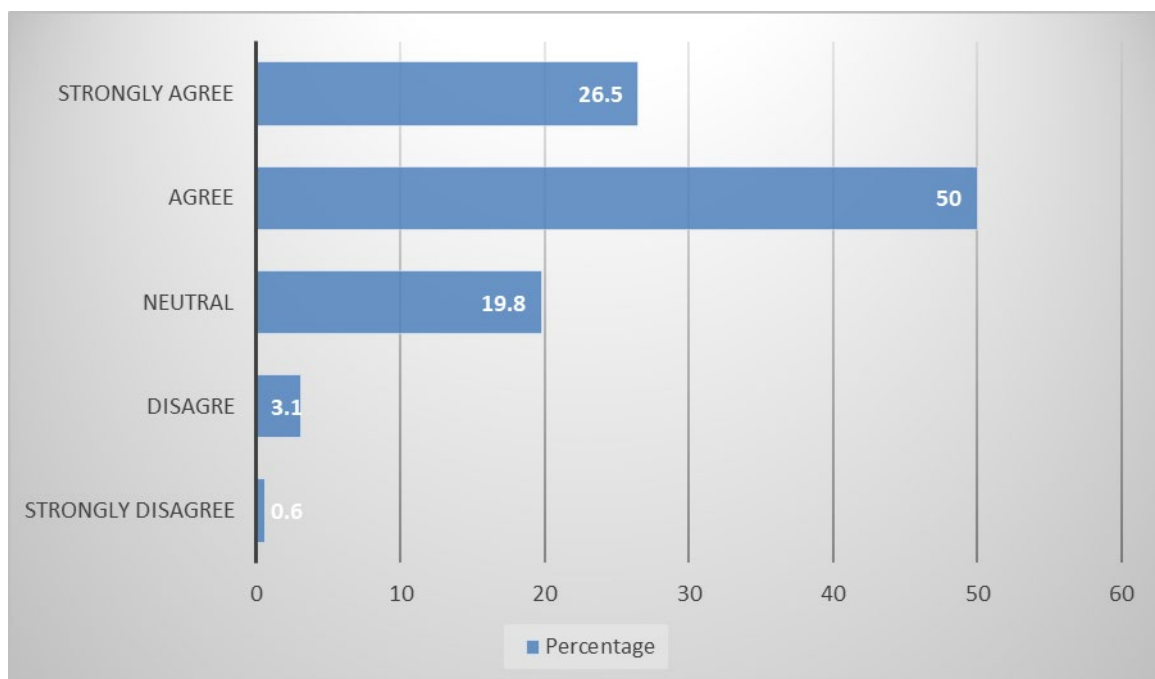
Figure - 6: Opinion on Digital Literacy leading to paperless society

As shown in figure 6, a paperless society may be achieved via the use of digital media and information literacy abilities. Half of the respondents (50%) agreed with this statement, and 26.5 percent of those surveyed strongly agree. The neutral response rate was 19.8 percent and 3.1 percent disagreed, and 0.6 percent only strongly disagreed with this statement.

Conclusion

The Social media seems to be a major media through which awareness on new technologies are propagated to the younger generations, and the present day generation feel themselves to be good at typing, making web searches, internet surfing and like works as they affluently make us of gadgets. Email and WWW are the most frequently used Internet services and the majority are willing to learn more about the digital technologies as they felt their learning can be enhanced by making use of digital technologies. While digital technologies are highly being used for connecting with others through social media and like. Preference for reading literary books was more among the respondents and they read books to build their knowledge and discover new information. Getting suggestions on books to read was more through social media and they had their preferences for Print and electronic versions of books was divided for different reasons and occasions. Majority agreed that having better digital literacy will be the solution for paperless society. Better digital literacy and healthy book reading habits are complimentary to each other and post pandemic the online learning and hybrid learning models has gained momentum. Being digital literate is the need of the hour for everyone in the society as we have moved longtime back in to the digital era.

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DISTANCE EDUCATION AND LIFELONG LEARNING

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ABSTRACT
When it comes to distance education, it is a form of learning independent of time and space based on individual learning. Education is a constantly developing and growing set of systems. In our developing world, the technology we use in every profession and every field is also used very actively in the field of education. Technology supports education in many ways. In addition, one of the critical elements that support lifelong education is information technology. There have been significant changes in education with the effect of information technologies.

This study is a literature review of distance education activities. In line with the aim of this study, to identify the problems for distance education and lifelong learning and to present suggestions. In addition, the problems experienced by distance education were mentioned, and solutions were offered. The historical dimension of distance education and lifelong learning has been mentioned, and the differences between them have been tried to be revealed. In addition, the qualities of lifelong learning were mentioned, and comprehensive research was conducted on people's lifelong learning in today's conditions. The results were interpreted and discussed within the framework of the purpose of the research, and some suggestions were made for future studies.

Keywords: distance education, education, digitalization, learning

Introduction

Distance education; It is a planned and systematic education method that brings together the elements of learning and teaching and provides two-way communication between the student and the teacher in different environments. As in face-to-face education, materials, auditory tools, technologies, and written and printed materials are used (Akyürek, 2020).

Many developed, and developing countries benefit from this technology. It is a contemporary application that enables the student to learn by taking advantage of communication technologies. It facilitates access to experts and educators located in different regions. It effectively reaches and disseminates information to more people (Şahin, 2021; Demir, 2014).

Various methods can be used in the development of distance education. The aim is to deliver information from one point to many points. These methods are; distance education, electronic teaching, online teaching, and computer-based teaching. These methods are interconnected and mutually inclusive training methods.

Computer-based education is carried out through media such as CDs and DVDs, while online education is done through social media, internet and virtual media. Electronic teaching encompasses all these methods and has a broader field; among other things, electronic communication technology can be used, e.g. CD, DVD, Internet, television broadcasting, video broadcasting, satellite broadcasting, and intranet communication technologies. It has been stated that media and communication technologies have an essential place today and significantly impact our lives (Arıklı, 2018). Distance education is an innovative education service that covers all the abovementioned methods and uses these tools together (Kırık, 2014).

Today, it is seen that learning activities in classroom activities and out-of-school activities have become mandatory to read with the help of electronic tools such as digital platforms, tablets, computers and smartphones instead of books (Akyüz, 2021). Although the appreciation of the target audience of books is essential in traditional education, it is determined according to the interests and needs of the child (Akyüz, 2019). In distance education, learning uses tools such as digital books to keep the student active in the course.

Historical Development

Distance education started by letter. In Sweden, on March 20, 1728, it was announced in the Boston Gazette that "Shorthand Lessons" would be given and that these lessons would be held by letter, the first part of distance education.

A language school was founded in Germany in 1856 by Charles Toussaint and Gustav Langenscheidt, which published teaching materials and provided distance education. As the first corporate initiative, distance education applications were stepped.

In 1884 the "Rustinches Distance Education School" opened in the same country.
In 1870 Illinois Wesleyan University started a distance education program in the United States.
The University of America was founded teaching by letter in 1883.
In 1922, a letter school was founded in New Zealand. (Özbay, 2015).

Distance education has been divided into three phases in history; Distance education was provided with printed materials, radio broadcasts and videotapes between 1860-1960, bidirectional audio and video broadcasts in 1960-1990, computer disks for educational purposes, hybrid technologies, virtual classrooms and internet technologies in 1990 and after (Demir, 2014).

The first steps of distance education in Turkey were taken in 1927; the authorities came together and decided that education by letter would be appropriate. The deficiency in educational institutions has led to the development of distance education. The contribution of education by letter to education attracted the attention of the Ministry of National Education. They took initiatives on education by letter, and then the Center for Teaching by Letter was established.

In 1968, the name of the Teaching by Letter Center was changed to the Center for Education with Radio and Television with the spread of radio and television. In 1982, with the emergence of educational technologies, this name continued as "Information Center". In the 1980s, distance education developed rapidly in Turkey and reached high points. With the development of technological infrastructure, it has reached a level that will meet the educational needs of the people. Distance education in higher education first started at Eskişehir Anadolu University Open Education Faculty.

Turkey started distance education much later than developed European countries, but today this situation is the opposite. Anadolu University has undergone a rapid development process with the establishment of the Open Education Faculty (Kırık, 2014).

Lifelong Learning
Lifelong learning starts from preschool and includes formal and non-formal education systems with individuals of all ages, including adult education. (Tunca, Şahin & Aydın, 2015).

Lifelong learning is a supportive process that strengthens and increases the knowledge, values and understandings people have gained throughout their lives and enables them to be applied in real life. (Polat & Odabaş, 2008).

Lifelong learning can occur at school, work, home, and community, regardless of age, status, or education level. It can be in different environments outside and outside the formal education system. It has increased the investment in people and knowledge and has supported the individual to acquire basic skills in order to sustain his life. It has also revealed opportunities for innovation for individuals and the need for learning to be more flexible.

Among the reasons for its occurrence; There are economic reasons, improving employment opportunities, change and development in the world, democratization, and personal needs (Güleç & Çelik & Demirhan, 2012). We are committed to providing traditional, critical, alternative and thought-provoking reading, primarily taught at the undergraduate level.
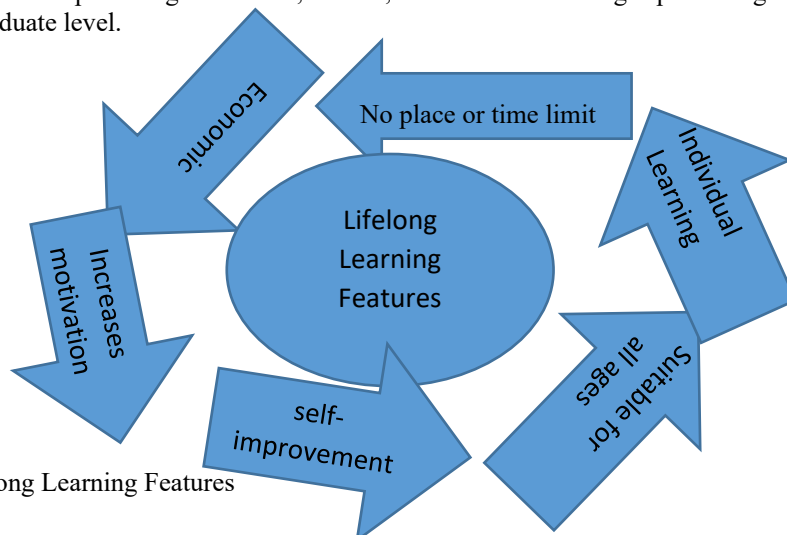
Figure 1: Lifelong Learning Features

Lifelong Learning Historical Development

The emergence of lifelong learning has been realized with the development of technology and science when there is a need for people who can learn, question, and be open to innovations, research and entrepreneur who can learn anywhere at any time. Lifelong learning is a concept first introduced by John Dewey, Eduard Lindeman, and Basil Yeaxle in the 1920s and has been developed over time. UNESCO made efforts to implement lifelong learning for the first time in the 1970s. In its report presented in 1972, it put forward the idea that education is a lifelong process, should not be limited to school and should be combined with out-of-school education, and should be carried out more flexibly. However, it is a process that has reached the present day when countries have set new targets. (Ünal & Kalçık, 2017).

Table 1: Distance Education and Lifelong Learning Features

Lifelong Learning with Distance Education
Distance learning supports lifelong learning
It offers alternative learning environments to adult learners.
It eliminates the limitation of time and space in education.
It offers equal opportunities in education.
It can offer international training opportunities.
It provides individuals with the opportunity to learn at their own pace.
People are responsible for their learning
It offers students an independent working environment.
Suitable for personal development.

It is possible to come across many definitions of distance education in the literature. According to Moore, distance education "Distance education can be defined as a family of teaching methods in teaching behaviours that are carried out separately from learning behaviours, which includes learning behaviours that must be performed continuously with the presence of the student; that is, the communication between the teacher and the student, printed; electronics; mechanical or other devices should facilitate it" (Moore & Anderson, 2003). In another study, student counselling is the systematic regulation of self-study conducted by a team of teachers, each of whom takes responsibility for protecting student achievement and displaying the learned material (Kaya, 2002; Moore & Kearsley, 2011).

Distance education studies show that the process brings conveniences and difficulties. Distance education has no time-space restriction, and it is economical because many students can be reached from their homes. However, on the other hand, it has limitations such as a lack of face-to-face communication, inability to give instant feedback during learning, and communication problems in crowded student groups (Dinçer, 2015; Kölemen, 2023). To define distance education briefly, it is systematic teaching in which individual learning is effective, and learning takes place independently of time and place.

There are four essential elements in the definition of distance education (Simonson et al., 2012). The first of these is that distance education is a formal education carried out by an institution. Distance education institutions have institutional activities such as accreditation, diploma, certificate, increasing the quality of education, organizing learning, etc. The second element is that the teaching staff and the learners are separate from each other in space or time. The third factor is the interaction provided by communication technologies. While interaction is critical, it is not a primary requirement and can be synchronous (synchronous) or synchronous (asynchronous). Television, radio, internet, telephone, radio, letter, What are the critical elements that support lifelong education, and how does information technology play a role in this? Are there any challenges with distance education, and what are some solutions? What is the historical development of distance education, and how has it evolved? The writing is clear and informative, but it could benefit from including more concrete examples of successful distance education programs and their outcomes to improve their effectiveness.

Additionally, breaking up the text into shorter paragraphs with clear headings could make it easier for readers to navigate and absorb the information. Finally, including quotes or personal anecdotes from individuals who have benefited from distance education could add a human touch, make the topic more relatable, Provide information on distance education, etc., and can be used as communication technology. The fourth element is to provide a connection between the learning instructor, and the resources where instructional design principles and educational theories are put to work and learning is organized (Ozan, 2013; Canbek, 2015).

Table 2: Advantages and Disadvantages of Distance Education

Advantages	Disadvantages
Individual learning in education	Having limitations in communication with learners
To be independent of time and space	Difficulties in following the student
Awareness of learning in the individual	Difficulties in ensuring student motivation
Being independent in learning	The student's access to the teacher is limited
Different training options	The inefficiency of the application courses
The cost is cheap	Dependence on communication technologies
Providing learning with different educational options	Low learning achievement
Suitable for students with disabilities	Watching the subjects that the student sees on the screen as if watching TV reveals the mistakes in learning
It provides people with a wide variety of new learning options.	
The ability to be easily accessible	

The ability to be easily

For example, keeping a student with hyperactivity in a distance learning course is challenging. Because he will always be on the move and unable to pay attention to education, it can be ensured that the student with these qualities adapts to the course synchronously (online) and asynchronously (video). In addition, activities can be done in a way that does not distract the child's attention from learning.

Students should pay attention to their sleep patterns and nutrition in order to adapt to the lesson. They should continue their lives in that order as if there were face-to-face education. For example, if students have morning classes, they must have breakfast before class.

In order to adapt to the lesson before the start of the lesson, the mother or father should sit the student in front of the computer a few minutes before the lesson time and ensure that the student participates in the lesson. Alternatively, the student's parents must actively listen to the lesson with the child during the online lesson. For the online course, the student must have a study room. It is necessary to comply with the class rules, away from ostentation, and there should be no distractions. In other words, a quiet environment and the distraction of the student should not be in the room. Teachers should also come to distance learning classes prepared and motivated. Otherwise, the lesson will not be productive.

Conclusıon and Recommendatıons

Distance education features that overcome the educational barrier and lifelong learning that emerged with the awareness that the old period education and knowledge are no longer sufficient and that their continuity has not come were mentioned. In order to raise a more up-to-date, innovative, and valuable society, thinking individuals, the concept of lifelong education, which brings innovation to knowledge and education, covers the developing world with the introduction of our lives.

It is known that with the support of Unesco, the concept of lifelong learning has settled into our lives. It is possible for the individual to renew himself constantly and to continue his life in harmony with society with lifelong education. This innovation in education prevents individuals from breaking away from society by increasing the continuity of education. In addition, with distance education, it is known that education and information are spread to more people and more areas. With distance education, many individuals with disabilities or insufficient financial status for education have completed their education and have been integrated into society.

Distance education does not require face-to-face and side-by-side for the educator and the student. This can be achieved through technological means. In this way, practical and valuable educationalWhat are the specific problems experienced in distance education and lifelong learning?

Appropriate environments should be prepared to support lifelong learning opportunities in universities. At the same time, this applies to distance learning. It should be remembered that the only way for students to stay up-to-date after graduation is to continue lifelong learning. Distance education and lifelong learning proceed in parallel. These two intertwined methods have significant contributions to the educator and education. Educatıonal institutions should incorporate this educational method and concept and continue their education with this view.

Different course contents should be prepared for students at each level, and the presentation of the course should be presented differently for each level. Animated or game-based course content for preschool and primary education, live lessons for high school students, i.e. interactive, video lessons in a supportive way with the subject, homework and quiz methods should be made efficient. For students studying in preschool and primary school (1.2.3.4), distance education course hours should be limited to 20 minutes. Then, class breaks should be given and limited to a few lesson hours. The teacher must prepare the lesson carefully and come to the class technologically equipped. Interact with the students in the course and ensure that the students are active in the lesson. It should make the lesson more efficient by asking questions to the students about the subject in the form of questions and answer in between. If he has been given homework, the teacher should come to class in the next lesson having checked the assignments.

Moreover, it should make students who do not do the homework do their homework by stating that the assignment is mandatory. Your teacher can interactively prepare course content with technology, and if the technology knowledge needs to be improved, he should improve himself by training. The teacher should give the students homework activities as a repetition of the lesson. Assessments and evaluations should be appropriate to the student's knowledge levels and qualifications (age).

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FOREIGN LANGUAGE TEACHING WITH MOBILE LEARNING AND MOBILE APPLICATIONS

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ABSTRACT
Today, mobile learning is an essential foreign language learning tool containing unlimited and very different materials. A more important feature of mobile learning is that it attracts the attention and interest of young people, representing the most significant foreign language students. Let us take into account the objectives of language teaching. The understanding that it should be transferred with different methods and materials has become essential in today's world to increase the motivation and interest of students. For this purpose, this research focuses on mobile learning and language teaching with mobile applications. Instead of staying away from mobile applications that guide our lives more in developing and changing living conditions and are no longer irreversible, we should follow the developments in the technical and digital fields and think about how we can incorporate them into our educational life in the best and most efficient way. Mobile tools can be used effectively in the field of foreign language education as well as in other areas of education and training.
Keywords: Language, Learning, Mobile Learning, Mobile Applications, Foreign Language Teaching.

Introduction

Today, when information is produced very quickly, it becomes crucial to access and apply knowledge quickly to the learning process. Internet and mobile technologies can provide access to global communication; a relationship between mobile technologies and learning will inevitably arise (Sharples, Taylor and Vavoula, 2 Dec 2007). 21. the world of the century has been heavily exposed to technological developments and, as in many areas, has experienced a transformation in the field of education due to technological developments. These developments in the field of informatics have resulted in the frequent use of e-learning systems in traditional and distance learning environments. A study stated that the special education course taken with distance education had problems due to internet connection problems. From this point of view, it was concluded that distance education courses could have been more effective than face-to-face education (Kara, 2023).

The introduction of mobile tools in educational applications after computers have made it possible to design courses using real-world and digital-world resources. Decoupled and mobile learning (m-learning) applications have taken their place in today's educational understanding.

Mobile learning applications are completely need-oriented, and modern mobile learning applications are emerging by signing many innovations today. These applications will shed light on the subsequent times and enable education to be carried further. In particular, it is a requirement of the technological age that new-generation students can easily access almost any application.

Mobile Learning

Many definitions have been made about what mobile learning is, and the technology-centred ones of these definitions have lost their validity quickly due to the rapid development of mobile technologies. However, some definitions often used in field writing are as follows. Harris (2001), the intersection of m-learning with mobile computing and e-learning to produce a learning experience anytime, anywhere; Traxler (2005), all kinds of learning initiatives where the only or dominant technology is portable mobile devices; Trifonova (2003) defines it as all kinds of learning and teaching activities that take place through mobile tools or mobile environments.

The emergence of a new generation of mobile tools, especially the users' rapid adoption and use of Android and iOS-based smartphones and tablet computers, has led to the emergence and widespread use of m-learning (Kara, 2023). Mobile vehicles are portable; they enable social interaction; they offer the opportunity to collect real-time data according to the location, time and environment; it creates many educational opportunities in terms of being able to connect with other mobile vehicles or networks and enabling them to be individualized (Klopfer et al., 2002). E-Learning is the union of technology and education (Siemens, 2002). On the other hand, mobile learning appears as an extension of e-learning, which is constantly developing in parallel with technology (Kinshuk, 2003); it allows the learning action to eliminate a particular place and time limitation. It is stated that the explanation of the mobile learning expression is actually "mobile e-learning" (Mehdipour & Zerehkafi, 2013).

1. **Method**

This research will mention the importance of mobile learning and mobile applications in language teaching. Thus, it will be tried to show that such applications will create an essential richness while providing Turkish language education. In particular, the studies conducted on mobile applications, the lack of which we feel with excess during the COVID-19 process, were examined, and document analysis, one of the qualitative research methods, was used.

1. **Mobile Tools and Language Teaching**

Mobile vehicles, especially after the early 2000s, have adopted a hybrid structure, adapted to new technologies very quickly and have become vehicles that can accommodate many features within their structure. For example, the new generation of smartphones and tablet computers have become tools simultaneously accommodating many features such as a computer, phone, media player, camera, video recorder, and voice recorder. Another essential development experienced is that mobile vehicles with a natural user interface have new forms of communication such as touch, movement, sound, and image and can be easily transported anywhere Decently. In addition, mobile vehicles are getting smaller every day in October and enrich the user experience by using advanced sensors while increasing the level of interaction.

The technical features of mobile communication tools and new forms of communication, as well as the ability to use interactive structures, provide cloud computing support, enable the use of augmented reality applications, connect to social networks, use location information, recognize other digital tools and exchange data, such as the ability to have features such as mobile tools have emerged as an indispensable part of our daily life.

The opportunities provided by mobile tools have attracted the attention of educators and the academic world, and mobile learning systems have taken their place in our lives as an extension of e-learning systems. The hype cycle is a study that shows the acceptance and maturation of technology and graphically shows how technology will find life in the future. Gartner organization determines new technologies that will guide the future with studies on human-machine interaction. The hype cycle, created by Gartner, is a study accepted by academic and social circles and shapes the future (Gartner, 2011; 2012; 2013).

1. **Transition to Mobile Learning in Language Teaching**

Mobile learning has advantages in terms of technological prevalence, compliance with the nomadic society structure and the ability to meet the needs of new generations, as well as the following features in the learning-teaching process. These:

- Enabling uninterrupted learning in formal, informal and non-formal learning environments,
- Providing independent learning anytime, anywhere, time and place,
- Increasing the equality of opportunity in education,
- Providing instant evaluation and feedback,
- Facilitating individualized learning,
- Using time effectively and efficiently inside and outside the classroom,
- Ability to use it within the scope of learning, communication and support services,
- Supporting situational learning,
- Evaluation of dead time (journey, waiting in line, etc.)
- Easy use of mobile vehicles,
- Instantaneous in the process of communication and sharing,
- No need for technological infrastructure to be able to run mobile vehicles to work,
- To be able to meet the needs of individuals who need special education,
- Ability to present multimedia elements to users,
- Enabling collaborative learning

1. **Mobile Learning Projects and Fatih Project**

There are many studies conducted using mobile technologies. Some of these studies are ESF Mobile Learning Project, UNITE, Cutting IT, Healthy for Life, Foyer Lifeskills, Merrill Lynch GoLearn, M-Learning, The mobile Digital Narrative, BLOOM, MOBILearn, The MoLE, MoLeNET and FATIH Project conducted in our country.

The common feature of these projects is to enrich the learning process, carry the learning activity beyond the classrooms, and design the learning process according to the learner's needs. These studies revealed the importance of m-learning and paved the way for new pedagogy and applications on a theoretical basis for m-learning.

FATIH Project: The purpose of the FATIH Project is to create an information society, to make valuable technology in education, to ensure equality of opportunity in education and training, and to improve technology in schools. For this purpose, it is one of the most comprehensive and large projects using mobile technologies in the world, aiming to provide LCD panels, interactive blackboards and internet network infrastructure to 570,000 classrooms so that information technology tools can be used more in the learning-teaching process; to distribute tablet computers to about 16 million students and 700 thousand teachers.

1.   **The Beginning and Present of Foreign Language Teaching through Distance Education in Turkey**

Current examples of the applications of teaching foreign languages by distance education initiated by the Ministry of National Education with foreign language teaching by radio and television school programs include the Ministry of National Education Open Education High School and Open Primary School, Anadolu University, Middle East Technical University, Phono and Limassol Naci Publications Dec.

It is a fact that foreign language teaching through distance education requires unique teaching methods. In cases where geographical and administrative factors make distance education preferable, providing intensive, interactive communication in the foreign language learning process is extremely important for success. The distance education method can be applied more intensively to give equal chances to schools without foreign language teachers and limited resources. In addition, the distance education method can also help teach languages that are not widely taught. For a more functional distance education application, Communication by phone, fax or e-mail on live broadcast, Constant presence of the teacher in the Distance Education Center, Use of multimedia (computer, voice recognition tools, audio cassettes, exercise books, etc.), the use of electronic mail, the use of 800 phone lines may be recommended.

The e-group, which will be created in line with the common interests of the student group, may also be an effective method of using language. The management's belief and support for the system are fundamental. Depending on the population density in Turkey, the large number of students also keeps distance education constantly on the agenda. However, the large number makes it difficult for the services to reach the desired level and quality. Nevertheless, in today's world, as long as a large audience is motivated to learn a foreign language, every service produced will achieve its purpose (Işman, 2011).

Conclusion, Discussion and Suggestions

Mobile tools are developing rapidly, and in parallel with this development, they are creating opportunities that combine learning environments and allow learning to continue outside the classroom. Nowadays, when everyone has mobile tools, mobile tools not only support learning but also allow learners to constantly communicate with each other through social networks and other communication methods, to establish connections between the virtual and real world constantly and to access information by joining networks (Decıklı, 2023).

Mobile learning is a model realized by using the easy access to information feature of mobile devices (Jin et al., 2019). Nowadays, most distance education applications are also developing mobile applications to provide services to their users. With mobile applications, users can access information anytime without depending on time, place and space.

In a period when online education is so widespread, it is essential to realize online platforms immediately in an educational journey that cannot be interrupted and causes harm, such as language teaching, otherwise. Dec. Although online education has positive and negative aspects, these platforms need to be made much more functional thanks to discoveries and activities to be developed in the modern period. While using mobile learning tools, it is possible to learn about the experiences in different countries and apply them in Turkish teaching. In addition, it is vital to review the learning activities applied in the classroom environment in formal education according to online education, to revise these activities with additional additions or reductions and to ensure diversity in online education.

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IMPACT OF COVID-19 ON EDUCATION AND RESEARCH: A PERSPECTIVE OF SELECT STUDENTS AND RESEARCHERS IN INDIA

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ABSTRACT
The coronavirus, or COVID-19, outbreak greatly impacted all spheres of human life across the world, education and research institutions were no exception to this scenario. COVID-19 resulted in the closure of all significant activities globally, including educational and research activities. The present study attempts to explore the impact of COVID-19 on educational and research activities in India. The online survey method and responses were collected using a structured Google Forms questionnaire. The analysis is based on 251 responses from various higher education institutions, of which 174 respondents are students from higher education institutions and the rest, 77, are research scholars. The results reveal that most respondents agreed that COVID-19 greatly affected overall educational and research activities. The respondents also revealed that open education resources (OER) and libraries played an essential role during COVID-19, underscoring the importance of encouraging educators, researchers, and learners to espouse and brush up on their technological and digital skills.
Keywords: COVID-19, Higher Education, Research, OER, Libraries, Teaching-Learning, Online Education, Lockdown.

Introduction
The World Health Organization classified the coronavirus disease 2019 (COVID-19) as a global pandemic in early 2020 due to its outbreak (Park, 2020). This virus has a significant negative impact on all major activities carried out by social, economic, healthcare, transportation and other sectors, including the education and research sector. Because of the temporary closures caused by COVID-19, more than 370 million pupils could not attend the institutions, negatively exacerbating their situation (Zussman & Little, 2020).

Owing to the indefinite closing of educational establishments, including schools, colleges, and universities, following the COVID-19 epidemic, there has been an unprecedented shift towards the rapid adoption of online teaching and learning activities (Martinez, 2020). All significant activities were conducted online, including teaching, learning, research, and other interactions with students and researchers. Lederman (2020) rightly stated that COVID-19 forced students and teachers to adapt to the digital teaching-learning experience. They explored different digital platforms for effectively carrying out their teaching-learning activities, and such tools received considerable importance in addressing the significant challenges.

Libraries, like other essential service organisations, demonstrated their capacity amid this turbulence and were catering to the information needs of stakeholders by channelising the resources online (Ansari & PM, 2023). Therefore, libraries of all kinds have been working hard to provide remote access to collections and facilities around the globe by updating their websites and information systems. Digital or virtual library services were widely made available by these libraries to their users (Chakraborty & Jana, 2021). This scenario resulted in an enormous rise in the use of electronic resources and library websites (Shastri & Chudasma, 2021).

Besides, since the emergence of COVID-19, the International Federation of Library Associations and Institutions (IFLA) has been gathering data and resources about the activities and changing roles of libraries

worldwide and routinely updates the information accessible on its website, including COVID-19 news and resource websites (International Federation of Library Associations and Institutions [IFLA], n.d.).

Research institutions and groups worldwide were frantically trying to discover a cure as the COVID-19 pandemic spread, especially in poorer regions. Traditional methods of gathering data for research, including distributing physical questionnaires and conducting in-person interviews, were impractical because of the preventive measures, including social exclusion and lockdowns. Under these circumstances, the appropriate way for researchers to generate qualitative and quantitative data was by working remotely and using computer-mediated communication tools (Clay, 2020). Besides, online video conferencing interviews are one of the quickest and most reliable ways to collect qualitative data from respondents, just like a face-to-face interview (Nehls et al., 2015). Because human movement is restricted during pandemic outbreaks like the current COVID-19 to prevent the spread of infection, conventional research approaches are not feasible. Researchers are problem solvers trusted by international societies to constantly offer sound and valuable answers to societal ills like the current COVID-19 pandemic.

Review of Related Literature
The literature review thoroughly explores academic databases like Science Direct, Web of Science, Sage, Emerald Insight, and other academic social networking sites such as Academia.edu, ResearchGate, and Google Scholar. The literature review has been provided under the following headings for more clarity.

COVID-19 pandemic and Higher Education
Due to the rapidly spreading nature of the virus and the high rates of illness and mortality that it causes, COVID-19 has resulted in a severe global crisis (Tabish, 2020). COVID-19 has affected people's lives and the global economy, causing substantial upheaval in the educational systems of both developed and developing countries (Xiang et al., 2020). The epidemic significantly impacted tertiary students' academic activities as they were worried about their future education, professions and social lives (Cao et al., 2020). The International Association of Universities (IAU), in one of the recently conducted surveys of higher education institutions across the globe, revealed that more than 90% of the institutions had switched from classroom instruction to remote instruction or were in the process of doing so (Marinoni et al., 2020). The sudden switch to online learning without any preparation puts the majority of students at risk of developing into passive learners with short attention spans, especially in nations like India where the curriculum was not designed for such a format and the foundation for online learning was not yet ready (Srivastava et al., 2020). The significant challenges stakeholders face are mental distress, physical immobility, financial crunches and technological concerns (Kalia et al., 2023) .

The closure of schools, training centres, and higher education institutions during the pandemic resulted in a paradigm shift to online learning as educators started to provide high-quality instruction through numerous online venues. The school system and educators have adopted "Education in Emergency" through several internet platforms and were compelled to accept a system for which they are unprepared (Pokhrel & Chhetri, 2021). E-learning platforms were crucial in helping schools and universities throughout the epidemic to support student learning (Subedi et al., 2020). Students with physical disabilities also benefited from online learning because the classes were conducted virtually in an immobile environment (Basilaia & Kvavadze, 2020) .

Teachers also created educational classrooms, training sessions, and skill development programs using unified collaboration and communication tools like Google Classroom, Microsoft Teams, Blackboard and Canvas (Petrie, 2020). Due to the abundance of platforms and online educational resources, instructors and students frequently encounter issues when using or referring to them. Teachers actively worked together to create various online teaching strategies. Due to the shared experiences of teachers, parents, and kids, there is an unmatched opportunity for cooperation, original thinking, and a willingness to experiment with new ideas (Doucet et al., 2020).

Role of Open Educational Resources (OER) during covid-19
The sudden shift to online education during the COVID-19 pandemic significantly boosted demand for more readily available online information sources (Schafhauser, 2020). During this global crisis, educators readily adapted OER to expand student access to learning resources and remix the materials to maximise student learning and engagement opportunities (Van et al., 2020). Using the right educational technology to meet the needs of a diverse range of students improves access to learning tactics like Massive Open Online Courses (MOOCs) and various learning approaches (Onyema et al., 2019). According to research, OER are precisely as effective as conventional or commercial textbooks and materials, and teachers and instructors like them (Delgado et al., 2019; Grissett & Huffman, 2019; Hilton, 2016; John, 2020; Shams et al., 2020;). The Ministry

of Human Resources Development (MHRD) and the University Grants Commission (UGC) made numerous arrangements, including the launch of numerous virtual platforms with online depositories, e-books, and other online teaching and learning materials, educational channels via Direct TV and Radio for students to continue their education, and online meetings between faculty members and students (Jena, 2020) **.** Libraries across the globe also stepped in and utilised their ability to gather, evaluate, and provide organised access to OER through their websites (Ladan et al., 2020)**.** These libraries also responded to this online shift by enabling access to e-resources and databases to enrich online learning environments and research activities (Nagarkar, 2020)**.** OER thus provides a lasting solution to ensure fair, inclusive access to quality learning experiences and educational resources even during crises (Cable &Vézina, 2020).'

Problem

The pandemic has caused an unprecedented socioeconomic crisis that has affected every aspect of human life, including the education sector, which was greatly affected by the closure of educational establishments and the instant shift to online learning. The present study explores the effects of COVID-19 on education and research in general and its impact on teaching, learning, and research activities in particular through abrupt shifting to the online mode. The study further reveals the ways and means adopted by the stakeholders to address the unprecedented challenges posed by COVID-19. The study is confined to the perceptions of selected students and scholars currently enrolled in different universities and colleges for higher education and research programs.

Objectives

1. To analyse the impact of COVID-19 on education and research.
2. To reveal the stakeholders' perceptions regarding the abrupt shift towards online learning and research activities.
3. To analyse the role of OER in higher education during covid-19.
4. To trace the emerging approaches and strategies adopted for overcoming the challenges associated with online teaching and learning during COVID-19.

Methodology

An online survey using a structured questionnaire was adopted for the study. The questionnaire was designed as a data collection tool in Google Forms due to its ease and accuracy in data collection. The questionnaire was distributed among online student and research scholar groups and forums on various social networks identified as alternative modes for channelling and distributing questionnaires. The data is represented in tabular form for drawing meaningful inferences and conclusions regarding the laid-out objectives and suggesting recommendations to further enrich online education and research activities to cater to the evolving online educational requirements and skills.

Data Analysis
Distribution of respondent Gender wise and education level-wise

The analysis is based on 251 responses from various higher education institutions. Out of 251 responses, 50% of respondents were from each gender, i.e., 127 were males and 124 were females. The educational qualifications of the respondents are as follows: 174 participants (69.32%) are post-graduate students, and the rest, 77 (30.68%), are research scholars (Table 1).

Table 1. Distribution of respondent Gender wise and education level-wise
N=251

Gender	Number of Respondents	Respondent types	Number of Respondents
Males	127(50.60)	Post-Graduate students	174(69.32)
Females	124(49.40)	Researchers	77(30.68)
Total	**251(100)**	**Total**	**251(100)**

Source: Primary Data
Note: Figures in the parentheses indicate the Percentage

Impact of COVID-19 on Educational Institutions and the Switch to Online Mode

Almost all educational institutions have been affected by the COVID-19 outbreak, as out of 251 responses, 214 respondents (85.25%) responded yes, followed by 24 (9.56%) for no, then 10 (3.99%) were uncertain, and lastly, only 3 respondents (1.20%) preferred not to answer. The data also reveals that almost all the educational institutions have switched to an online mode to continue the process of teaching and learning during the pandemic, as out of 251 responses, 233 respondents (92.83%) have answered "yes" regarding the adoption of an online mode of education, followed by 16 (6.37%) answering "no" in this regard, with only 2 (0.8%) blank responses (Table 2).

Table 2. Impact of COVID-19 and Switching to online mode
N=251

Responses	Impacted by COVID-19	Switch to Online mode
	Number of Respondents	Number of Respondents
Yes	214(85.25)	233(92.83)
No	24(9.56)	16(6.37)
Uncertain	10(3.99)	0(0)
Blank	3(1.20)	2(0.80)
Total	**251(100)**	**251(100)**

Source: Primary Data
Note: Figures in the parentheses indicate the Percentage

Modes of the Teaching-Learning Process
As a remedial measure for continuing the teaching-learning process during the pandemic period, most educational institutions have adopted the online mode of education with real-time video conferencing, as out of 251 responses, 161 (64.14%) considering real-time video conferencing, followed by online presentations of 27 (10.76%), 23 (9.17%) for online mode but not in real-time, then 18 (7.17%) for online mode of education with audio recording, and finally, 7 (2.79%) for other modes and 15 (5.98%) preferred not to answer (table 3).

Table 3. Preferred online modes adopted for Teaching and Learning
N=251

Preferred online modes adopted for Teaching and Learning	Number of Respondents
Online in real-time (Video Conference)	161(64.14)
Online Presentations	27(10.76)
Online not in real time (Video Recordings)	23(9.17)
Online with Audio Recordings	18(7.17)
Others	7(2.79)
Blank	15(5.98)
Total	**251(100)**

Source: Primary Data
Note: Figures in the parentheses indicate the Percentage

Familiarity with OER and use of prominent OER platforms
OER are freely accessible and openly licenced resources that anyone can access anytime. However, unfortunately, a good number of people are unaware of these resources, as we have observed that out of a total of 251 respondents, 165 respondents (65.73%) are aware of these resources. In comparison, 72 respondents (28.69%) are unaware of them, and the rest 14 responses (5.58%) were left unanswered. Due to this scenario, a fair number of people cannot access and use them. The student community used various OER platforms like YouTube, Egyankosh, e-PG Patshala, Byjus, Massive Open Online Courses, Open Learn, etc. The data reveals that almost all the respondents used YouTube during these times to continue their educational activities, as the maximum number of respondents, 214 (85.25%), were using YouTube. This was followed by Khan Academy and MOOCs with the same respondents, i.e., 35 (13.94%) for each, followed by e-PG Pathshala and OpenLearn with 29(11.55%) respondents each, followed by Egyankosh with 19 (7.56%) respondents and Others 25(9.96%) used OER available through others sources like Google, Wikipedia, teacher's content, etc. (Table 4).

Table 4. Familiarity with OER and Use of Prominent OER platforms
N=257

Familiarity with OER	Number of Respondents	Platforms	Number of Respondents
Yes	165(65.73)	YouTube	214(85.25)
No	72(28.69)	Khan Academy	35(13.94)
Blank	14(5.58)	MOOCs	35(13.94)
Total	**251(100)**	e-PG Pathshala	29(11.55)
		OpenLearn	29(11.55)
		E-Gyankosh	19(7.56)
		Others	25(9.96)

Source: Primary Data
Note: Figures in the parentheses indicate the Percentage

Impact of Covid-19 on Research

COVID-19 greatly impacted the research, as can be observed from the responses of 77 respondents: out of which 60(77.92%) respondents ultimately agreed that the pandemic greatly impacted their research work, and only 10(12.99%) respondents disagreed with the statement. The remaining 7(9.09%) respondents were neutral, i.e., they didn't observe the significant impact of the pandemic on their research work, as shown in Table 5.

Table 5. Impact of COVID-19 on Research
N=77

	Impact of COVID-19 on Research
Responses	**Number of Respondents**
Agree	60(77.92)
Disagree	10(12.99)
Neutral	7(9.09)
Total	**77(100)**

Source: Primary Data
Note: Figures in the parentheses indicate the Percentage

Level of Impact on Research Activities

Most of the researchers were significantly impacted by COVID-19 as out of 77 responses, 37(48.05%) respondents agreed that research activities were completely halted during COVID times. In contrast, only 18(23.38%) revealed that the pandemic created a sense of uncertainty among them about their research activities. Another 18 (23.38%) respondents experienced a less significant impact on their research activities, and the remaining 4 (5.19%) preferred not to answer the question, as shown in Table 6.

Table 6. Level of Impact on Research Activities
N=77

Level of Impact on Research	Number of Respondents
Completely Halted my research activities	37(48.05)
Resulted in uncertainty regarding my research activities	18(23.38)
Had less impact on my research work	18(23.38)
No-response/Blank	4(5.19)
Total	**77(100)**

Source: Primary Data
Note: Figures in the parentheses indicate the Percentage

Contact of Researchers with their Supervisors during the Pandemic Period

More than half of the respondents, i.e., 51 (66.23%), revealed that they were in partial contact with their supervisors, whereas only 12(15.58%) respondents had Face-to-face contact with their research supervisors. The other 12 (15.58%) respondents were not in any contact with their research guides, and the remaining 2(2.60%) respondents preferred not to answer (Table 7).

Table 7. Contact status with Supervisors
N=77

Contact Status	Number of Respondents
Partial Contact	51(66.23)
Face-to-face contact	12(15.58)
No Contact	12(15.58)
No answer	2(2.60)
Total	**77(100)**

Source: Primary Data
Note: Figures in the parentheses indicate the Percentage

Availability of OER through Libraries during the Pandemic Period

Table 8 reveals that out of 77 respondents, 22 (28.57%) agreed that OER were accessible to them through their institutional libraries, whereas 26 (33.77%) partially agreed with the same statement, and

26 (33.77%) respondents disagreed. The remaining 3(3.89%) respondents preferred not to respond.

Table 8. Availability of University Library Resources

N=77

Responses	Number of Respondents
Agree	22 (28.57)
Partially Agreed	26(33.77)
Disagree	26(33.77)
Blank	3(3.89)
Total	**77(100)**

Source: Primary Data

Note: Figures in the parentheses indicate the Percentage

The researcher's enthusiasm towards research work during the Covid epoch

The passion or enthusiasm for learning among the students decreased during Covid times. Similarly, the passion of the research scholars for the research work also decreased to a greater extent. Table 9 shows that 45 participants (58.44%) agreed that their overall passion for research decreased, 18 participants (23.38%) agreed that their overall passion for research increased, whereas 11 participants (14.29%) agreed that their passion remained constant, and 3 participants (3.39) preferred not to respond.

Table 9. The researcher's enthusiasm towards research work during the Covid epoch

N=77

Responses	Number of Respondents
Decreases	45 (58.44)
Increases	18(23.88)
constant	11(14.29)
Blank	3(3.39)
Total	**77(100)**

Source: Primary Data

Note: Figures in the parentheses indicate the Percentage

Findings and Conclusion

The current study reveals that the COVID-19 pandemic enormously impacted most participants' academic performance. More than 85% of the respondents believe that the COVID-19 outbreak has impacted their educational activities to a greater extent due to the cancellation of their offline classwork. Consequently, they shifted from the traditional learning mode to an online mode. More than 63% of the respondents agreed that they consulted various online teaching and learning resources, including OER, by accessing OER repositories like YouTube, e-PG Pathshala, Egyankosh, Khan Academy, MOOCs, etc. Still, many respondents could not harness the benefits of OER due to their ignorance about these resources.

As far as results are concerned, it was found that more than 77% of the research scholars ascertained that the pandemic significantly impacted the research activities. Several challenges were faced by the research scholars during these difficult times, such as stress and uncertainty, less access to library resources, problems in the compilation and drafting of theses, and very few face-to-face interactions with the guide(s). As a result of which, the researchers felt heavy workloads during these times. More than 66% of the respondents ascertained that they were having partial contact with their supervisors and the persons who were essential for their research work, thereby hampering the smooth conduct of their research.

The findings also reveal that more than 85% of the participant community agreed with the statement that the COVID-19 pandemic affected overall educational and research activities all across the country.

The epidemic allowed pedagogical techniques to evolve and for virtual education to be implemented at all levels of education. Online education helps students stay on track since it lets them learn at their own pace. The librarians employed a range of tactics to address the issue, including relying on empowerment initiatives (like information and media literacy), giving users access to reliable information, helping with research and collection development, promoting awareness, and using a variety of tools to assess information. Librarians should

function as catalysts for effectively disseminating information to promote proper knowledge. OER proved essential in these widespread crises for giving students more access to educational resources and customising or remixing those materials to increase student involvement and learning opportunities. This online transition would have been more challenging without digital tools, which have facilitated access to a wealth of academic and pedagogical knowledge resources. The COVID-19 outbreak has shown the value of preparing teachers and students to use these online educational tools and technologies. Teachers and students should be encouraged to continue utilising online technologies to enhance their teaching and learning activities and catch up with different advancements for brushing their skills and staying relevant to address various evolving challenges.

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MODELLING E-LEARNING ACCEPTANCE OF CLINICAL STAFF USING THE GENERAL EXTENDED TECHNOLOGY ACCEPTANCE MODEL FOR E-LEARNING

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ABSTRACT
Companies still increasingly rely on online training to train employees continuously, effectively, and efficiently. The intention of employees in using e-learning, however, is influenced by various factors. In this study, the influence of external factors on the acceptance of online training was examined in an operational context according to the General Extended Technology Acceptance Model for E-Learning. In this model, computer experience, computer self-efficacy, computer anxiety, perceived enjoyment, and subjective norm were included as important external factors that have been shown to be relevant in numerous empirical studies. In operational contexts, few studies to date have investigated the acceptance model and even less in Europe or Germany. To investigate the influence of external factors, data of 113 employees from a medical institution were collected after participation in an online training course by means of an online questionnaire and were evaluated by regression analyses. The predictors computer experience, perceived enjoyment, and subjective norm were the strongest predictors of perceived usefulness ($R^2 = 0.59$ of the complete model). The perceived ease of use was best explained by the factors computer experience, computer self-efficacy, computer anxiety, and enjoyment ($R^2 = 0.43$ of the complete model). The attitude towards using e-learning and the intention to use e-learning in this study were mainly influenced by perceived usefulness ($R^2 = 0.67$ and $R^2 = 0.59$ of the complete models, together with perceived ease of use). Overall, the acceptance model was largely confirmed in this study.
Keywords: Technology Acceptance Model, General Extended Technology Acceptance Model for E-Learning, computer-related experience, computer anxiety, computer self-efficacy, subjective norm, perceived enjoyment.

Introduction
Technology acceptance is concordantly considered the key to technological progress and spread of innovations in many domains, and it is also considered a core factor for using technology in education (e.g., Nistor, 2018). Particularly in this sector, the idea of rapidly increasing usage of e-learning environments is often emphasized (e.g., Allen & Seaman, 2016; Paechter et al., 2010). For example, Stiller and Bachmaier (2018) stated that "distance and online learning have become common and reputable educational methods in vocational and higher education" (p. 1). Also, Abdullah and Ward (2016) summarized that "e-learning systems have become an important part of delivering the modern university curriculum" (p. 238). Statements like these suggest that technology has been accepted and embraced in the educational sector. Although these statements might be valid, some astonishing evidence can be found to the contrary.

Focusing on the European and German markets and their enterprises, we could find the following evidence. Crossknowledge et al. (2016), for example, conducted a study on digital learning in European companies. From the top 1,000 largest companies in Europe, 114 were surveyed. They found that all companies were already using e-learning at the time of the survey, but e-learning often covered only a small proportion of further education. For example, 46% of the German companies reported that e-learning accounted for only 5% of all continuing vocational training in enterprises. Similar results were achieved in a study by the HHL Leipzig Graduate School of Management, the Stifterverband, and the e-learning provider Lecturio. They surveyed 245 companies and 184 universities in Germany on current trends in the field of continuing training between May 2016 and January 2017 (Kirchgeorg et al., 2018). Although e-learning had a high status in 98% of the companies, the share of e-learning in the total continuing vocational training of companies was only 10% in 59% of the companies surveyed (Kirchgeorg et al., 2018). These results point to a low level of use and thus possibly a low level of acceptance despite the attributed relevance.

One aspect in Germany that supports the assumption of low technology acceptance is that the majority of traditional classroom courses are preferred to e-learning (Crossknowledge et al., 2016). Siepmann and Fleig (2016) surveyed 774 companies on the use of e-learning in continuing vocational training and found that 57% of the

companies stated that the acceptance of traditional classroom courses is higher than for e-learning. This might evidence that a successful adaptation of e-learning in a company is not only influenced by organizational factors, but also significantly by the willingness of the employees (Stieglitz, 2015). Irrespective of the advantages and potentials of e-learning, one way to further the acceptance of e-learning in the workplace is to identify all relevant factors that explain acceptance of e-learning and technology.

Acceptance research plays a particularly important role in the adaptation of new information and communication technologies, given that its implementation is usually associated with high investment costs (Frankfurth, 2010). In the last decades, the importance and relevance of the topic has increased, and active efforts have been made to detect important factors (Abdullah & Ward, 2016; Baki et al., 2018; King & He, 2006; Schepers & Wetzels, 2007; Scherer et al., 2019; Šumak et al., 2011). A well-developed knowledge foundation from published studies on the subject of acceptance of e-learning can help with its implementation and contribute to the successful adoption of e-learning by learners (Lee, 2010). Contributing to this knowledge, we conducted a study based on the General Extended Technology Acceptance Model for E-Learning (GETAMEL; Abdullah & Ward, 2016). The model proposes the following five external factors: computer-related experience, computer self-efficacy, computer anxiety, perceived enjoyment, and subjective norm. These five factors are assumed to predict perceived ease of use of an e-learning system and its perceived usefulness, which both determine the attitude and intention to using a system. In operational contexts, few studies to date have investigated these factors (Chipps et al., 2015). Thus, in this study, we investigated whether the influence of the five external factors on the acceptance of an online training according to the GETAMEL (Abdullah & Ward, 2016) can be replicated in an operational context.

The General Extended Technology Acceptance Model for E-Learning (GETAMEL)
From a social science perspective, the term acceptance is understood as the acceptance or rejection of an innovation by one or more users (Reichwald, 1982; Simon, 2001). Innovations are new products or services (Kollmann, 1998). According to Simon (2001), acceptance and rejection are contradictory, which is why acceptance must be regarded as a positive acceptance decision of an innovation by a user (Frankfurth, 2010). Acceptance includes the purchase or adoption of the innovation but also its subsequent use (Bürg et al., 2005). In the context of technology acceptance, the definition by Müller-Böling and Müller (1986; Nistor, 2018) has established itself in current research. They conceptualized technology acceptance as a two-dimensional construct consisting of an attitude and a behavioral component. The attitude component comprises an affective as well as a cognitive component (Frankfurth, 2010; Kollmann, 1999; Moore & Benbasat, 1991; Nistor, 2018; Simon, 2001). Affective refers to the motivational and emotional aspects, such as the rejection of a technology on the basis of fears, whereas the cognitive component weighs the costs and benefits of an innovation against the individual context (Bürg et al., 2005). The observable behavior towards an innovation, specifically the use of an innovation, is defined as behavior acceptance (Müller-Böling & Müller, 1986). In summary, acceptance research differentiates between attitudes and behavioral aspects, that is, between attitude towards behavior and behavior itself (Bürg et al., 2005; Nistor, 2018).

Acceptance models explain which characteristics comprise the latent construct of acceptance and which factors influence it (Jokisch, 2009). Accordingly, the GETAMEL was proposed by Abdullah and Ward (2016). At the core of the GETAMEL is the widespread and well-known Technology Acceptance Model (TAM) introduced by Davis (1986). The TAM is one of the most researched models to explain and predict the acceptance and usage of e-learning (Šumak et al., 2011). Ample evidence has shown the model to be valid and robust with good explanatory power (King & He, 2006; Schepers & Wetzels, 2007; Scherer et al., 2019; Šumak et al., 2011). In addition, Abdullah and Ward's (2016) meta-analysis extracted the five most prominent external factors influencing technology acceptance from the empirical TAM-based literature: (1) Computer-related experience, (2) self-efficacy, (3) computer anxiety, (4) social norm, and (5) perceived enjoyment. The extracted external factors, their estimated effect sizes (averaged path coefficients β from studies using Structural Equation Modelling or Multiple Regression Analysis), and the TAM together build the GETAMEL (see Fig. 1).

Perceived usefulness (PU) and perceived ease of use (PEoU) are the most important constructs in the TAM (King & He, 2006; Schepers & Wetzels, 2007; Scherer et al., 2019; Šumak et al., 2011). PU is defined according to Davis (1989) as "the degree to which a person believes that using a particular system would enhance his or her job performance," whereas PEoU is defined as "the degree to which a person believes that using a particular system would be free of effort" (p. 320). PU represents the subjective assessment of a person as to how far a specific system can increase work performance and PEoU the subjective assessment of how much effort is required to use the system. Whether an e-learning platform is accepted or rejected and thus used or not is largely determined by these two factors (King & He, 2006; Schepers & Wetzels, 2007; Scherer et al., 2019; Šumak et al., 2011). TAM assumes that (1) PEoU directly influences PU, (2) PEoU and PU influence the attitude towards

using a technology (AtU), (3) AtU then influences the behavioral intention to use the technology (ItU), and (4) ItU further influences the actual technology use (AU). In addition, PU is also assumed to directly affect ItU. The meta-analyses of King and He (2006), Schepers and Wetzels (2007), Scherer et al. (2019), and Šumak et al. (2011) provided evidence for TAM and its assumptions.
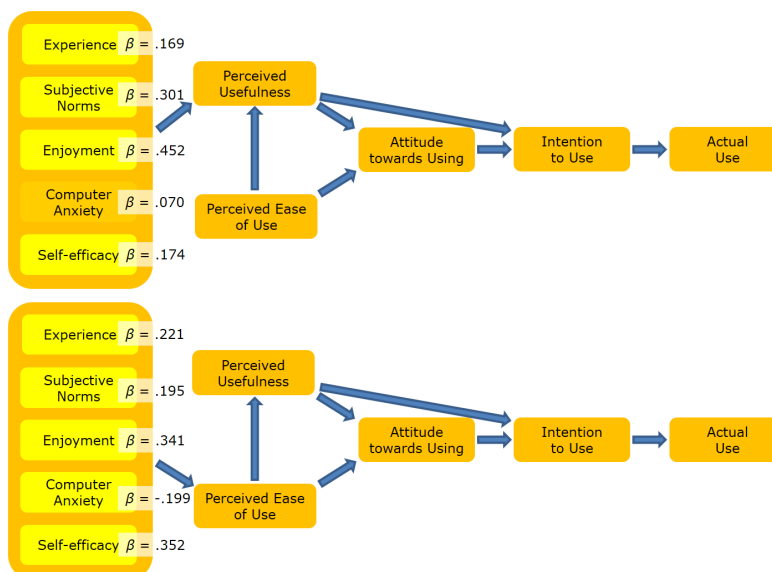
Figure 1: The GETAMEL with the average path coefficients found between the external factors and perceived usefulness (upper image section) and perceived ease of use (lower image section) of e-learning systems. The model refers to (university and college) students (Abdullah & Ward, 2016).

However, according to TAM, PEoU and PU in turn are influenced by external factors (Abdullah & Ward, 2016; Baki et al., 2018). External factors thus play a crucial role in explaining technology adoption behavior (Abdullah & Ward, 2016; Baki et al., 2018). Mathieson (1991) argued that TAM can only provide a rough explanation of the user's attitude towards new information and communication technologies because of a lack of external factors. Obtaining specific information about these factors is more important for identifying ways to improve and further develop the introduction of e-learning. If the TAM is extended by external factors, not only can the use of technology be predicted, but an explanation can also be provided for why a system is not accepted by users (Abdullah & Ward, 2016). Using this information, appropriate measures can be derived to improve acceptance (Davis et al., 1989). For this reason, the TAM has been extended with various external factors in acceptance research to learn more about the acceptance and usage behavior of e-learning (Abdullah & Ward, 2016; Baki et al., 2018).

Abdullah and Ward (2016) developed the GETAMEL out of the necessity to consider external factors. For this purpose, 107 studies were examined in a meta-analysis that had focused thematically on the introduction of e-learning and had used the TAM supplemented by external factors. Only factors that had been analyzed and confirmed in at least 10 studies on the TAM were considered. Abdullah and Ward (2016) extracted five variables out of 152 external variables that were the strongest significant predictors of PEoU and PU: Computer-related experience (CEXP), computer-related self-efficacy (CSE), computer anxiety (CANX), subjective norm (SN), and perceived enjoyment (PENJ) were the most frequently used and confirmed external variables. With the GETAMEL, Abdullah and Ward (2016) attempted to develop a universal model for investigating technology acceptance to unite the different results of previous research. In the following sections, the external factors listed in the GETAMEL and used in this paper are defined and their empirical relevance is worked out.

Computer-related experience (CEXP)
Individual characteristics, such as previous experiences with computers and information systems and the emotional status in the use of computers, have a direct or indirect impact on system use through beliefs (Lee, Hsieh & Ma, 2011; Lee, Hsieh & Chen, 2013). CEXP is defined as the amount and type of computer knowledge an individual acquires over time (Smith et al., 1999). Previous research has shown that CEXP is positively related to the adaptation of systems (Al-alak & Alnawas, 2011; Sun & Zhang, 2006). The higher the expertise, the higher the acceptance. Acceptance is thus dependent not only on the technology but also on the abilities and expertise of the individual (Lee, Hsieh & Chen, 2013). According to King and He (2006), experience is the most researched moderator variable of the TAM. Various studies have confirmed a positive influence of CEXP on

both PEoU (De Smet et al., 2012; Lee, Hsieh & Ma, 2011; Lee, Hsieh & Chen, 2013; Purnomo & Lee, 2013) and PU (Lee, Hsieh & Chen, 2013; Martin, 2012; Purnomo & Lee, 2013; Rezaei et al., 2008). People with more computer skills and expertise tend to have more positive feelings about the PEoU and PU of an e-learning system (Lee, Hsieh & Chen, 2013; Purnomo & Lee, 2013). The current findings show that individual computer experiences have a positive and significant influence on the intended use of e-learning or e-learning systems (Al-alak & Alnawas, 2011; De Smet et al., 2012; Premchaiswadi et al., 2012; Williams & Williams, 2010).

Computer-related self-efficacy (CSE)

According to Bandura (1982), self-efficacy is the conviction that certain situations and challenges will be successfully mastered. The construct of self-efficacy is believed to have an important role in the introduction of e-learning because the assessment of self-competence influences whether an action begins, the level of intensity in performing the action, and the stamina needed to complete the action (Abdullah et al., 2016; Bhatiasevi, 2011; Brown et al., 2006; Park, Nam, & Cha, 2012).

In the context of computer use, CSE describes the conviction that certain activities on the computer will be performed successfully (Shen & Eder, 2009; Strong et al., 2006). People who dare not solve tasks with a PC will avoid this tool (Igbaria & Iivaria, 1995), whereas for people with a high CSE, a high use of computers can be expected (Compeau & Higgins, 1995). This statement suggests that a high level of CSE has a positive effect on the intended use, whereas a low level of CSE is more likely to manifest itself in avoidance behavior (Hsia & Tseng, 2008; Moghadam & Bairamzadeh, 2009; Yuen & Ma, 2008). CSE also plays a crucial role in the assessment of PEoU and PU because the extent that people trust their computer-related skills and knowledge will have a significant influence on whether an individual perceives a new system as difficult or simple and how useful it will be (Abdullah & Ward, 2016; Hayashi et al., 2004; Lee et al., 2014; Madorin & Iwasiw, 1999; Venkatesh & Davis, 1996).

Finally, various types of self-efficacy in the context of online learning environments have been proposed. Among the most popular are CSE, self-efficacy on the Internet (ISE), and learning management system self-efficacy (Alqurashi, 2016). When the focus is specifically on learning on the Internet, the ISE is recommended because it assesses online learning skills (Tsai et al., 2011). In this study, the CSE was used because the use of online training requires more skills from the learner than the mere use of the Internet or a learning management system (Shen & Eder, 2009; Strong et al., 2006).

Subjective norm (SN)

Another external factor that has often been studied in acceptance research and identified as playing an important role in PEoU and PU is the SN (Al-Gahtani, 2016; Farahat, 2012; Park, 2009). SN is the extent to which people are convinced that others who are important to them think that they should or should not use the system (Fishbein & Ajzen, 1975; Venkatesh & Davis, 2000). Some researchers have argued that when an individual's peer group thinks that the use of an e-learning system is beneficial, the positive attitude is adopted by the individual (Abdullah et al., 2016; Cheng, 2011; van Raaij & Schepers, 2008). Results of current acceptance research show a positive and significant influence of SN on PU (Abdullah & Ward, 2016; Al-Ammary & Hamad, 2008; Karaali et al., 2011; Rejón-Guardia et al., 2013) and PEoU (Farahat, 2012; Lee, Hsieh & Ma, 2011; Motaghian et al., 2013; Yuen & Ma, 2008). SN as a factor is intended to examine the extent that the decision to use e-learning depends on the social influence of the environment.

Perceived enjoyment (PENJ)

Enjoyment is defined as the degree of pleasure a person experiences when using a specific system (Park, Son, & Kim, 2012). Performance successes resulting from the use of the system is not taken into account. Numerous studies have found that a high level of enjoyment in using the technology leads to a higher acceptance of e-learning (Al-Ammary et al., 2014; Al-Gahtani, 2016; Chen et al., 2013; Shyu & Huang, 2011; Zare & Yazdanparast, 2013). When a system is fun to use, the user is more likely to positively evaluate the system as being useful and easy to use (Al-Aulamie et al., 2012; Chen et al., 2013; Zare & Yazdanparast, 2013) and more likely to use the system (Cheng, 2011, 2012; Lee et al., 2005; Yang & Lin, 2011). This statement is supported by studies that have demonstrated a significant effect of PENJ on PEoU (Al-Aulamie et al., 2012; Shyu & Huang, 2011; Zare & Yazdanparast, 2013) and PU (Chen et al., 2007; Wu & Gao, 2011; Zhang, Guo & Chen, 2007). PENJ thus represents an antecedent for PU and PEoU (Chen et al., 2013).

Computer anxiety (CANX)

Blignaut et al. (2005) defined CANX as "a diffuse, unpleasant, and vague sense of discomfort and apprehension when confronted by computer technology or people who talk about computers" (p. 500), which according to them, comprises "an array of emotional reactions, including fear, apprehension, uneasiness, and distrust of com-

puter technology in general" (p. 495). Correspondingly, Igbaria and Parasuraman (1989) described CANX as "the tendency of an individual to be uneasy, apprehensive, or fearful about the current or future use of computers in general" (p. 375). CANX means fears or anxieties that arise when a person is confronted with situations in which they need to use a computer (Igbaria & Parasuraman, 1989).

According to Oyedele and Simpson (2007), CANX occurs because of a lack of experience and self-efficacy in dealing with the system. This lack in turn has a negative effect on the intended use and thus on the adaptation of an information system. An opposite view can often be found in studies about distance learning. These studies assume that anxiety directly influences self-efficacy, which influences computer usage and performance (Desai, 2001; Hauser et al., 2012; Saadé & Kira, 2009; Sam et al., 2005). Despite the different assumptions, empirical findings show that a high CANX leads to less frequent use or avoidance of an e-learning system (Al-alak & Alnawas, 2011; Al-Gahtani, 2016; Ali et al., 2013; Calisir et al., 2014; Chen & Tseng, 2012; Karaali et al., 2011; Lefievre, 2012; Park, Son, & Kim, 2012; Saadé & Kira, 2006; van Raaij & Schepers, 2008). Previous research on TAM has shown a negative correlation between CANX and the PEoU (Abdullah & Ward, 2016; Al-Gahtani, 2016; Ali et al., 2013; Baki et al., 2018; Hackbarth et al., 2003; Lefievre, 2012; Saadé & Kira, 2006; Venkatesh, 2000) and PU (Chen & Tseng, 2012; Igbaria, 1993; Igbaria & Iivari, 1995; Ifinedo, 2006; Liu, 2010; Mohamed & Karim, 2012; Saadé & Kira, 2006; Roberts & Henderson, 2000). Abdullah and Ward (2016), however, found a significant negative correlation between CANX and PU in only two out of seven studies in their meta-analysis, which is why this connection was excluded from the GETAMEL. Current studies such as those by Chang et al. (2017), however, confirm a significant negative correlation. In addition, CANX was also related to higher dropout (Stiller & Köster, 2016, but also see Long et al., 2009; Stiller & Bachmaier, 2017a, 2017b), and lower performance levels (Desai, 2001; Hauser et al., 2012; Saadé & Kira, 2006; Sam et al., 2005; Stiller & Bachmaier, 2018).

Empirical Evidence for the GETAMEL
We expected a trove of studies, following the publication of the GETAMEL and its five external factors by Abdulla and Ward (2016), to test the model, but were astonished to find only eight (see Table 1). The aim of all studies was to examine the influence of the predictors of CEXP, CSE, CANX, SN, and PENJ on PEoU and PU, and on the resulting attitude or intention towards using (AtU and ItU) a new technology, and sometimes the actual usage (AU). All studies used Structural Equation Modelling (Partial Least Squares). Tables 2 and 3 show the results for PEoU and PU, and Table 4 shows the results for AtU, ItU, and AU. The results of the eight studies are each detailed in the following review.

Table 1: Overview of GETAMEL studies.

	Paper authors	Sample	N	Nation	Analysis
1	Abdullah et al. (2016)	University students	242	England	Structural Equation Modelling
2	Chang et al. (2017)	University students	714	Azerbaijan	Structural Equation Modelling
3	Doleck et al. (2018)	College students	132	Canada	Structural Equation Modelling
4	Hajiyev (2018)	University students	698	Azerbaijan	Structural Equation Modelling
5	Kimathi & Zhang (2019)	University students	172	Tanzania	Structural Equation Modelling
6	Rizun & Strzelecki (2020)	University students	1692	Poland	Structural Equation Modelling
7	Cicha et al. (2021)	University students	664	Poland	Structural Equation Modelling
8	Matarirano et al. (2021)	University lecturers	101	South Africa	Structural Equation Modelling

Abdullah et al. (2016) investigated the influence of the five external factors according to the GETAMEL on PEoU, PU, and behavioral ItU. Undergraduate university students who worked with e-portfolios were surveyed. The results of the study show that CEXP, followed by PENJ, CSE, and SN explained significant variance in the PEoU of e-portfolio handling most strongly. The PU, however, could best be predicted by the PENJ and PEoU. In addition, the ItU e-portfolios could be predicted by PEoU and PU, resulting in 58% explained variance of ItU. In sum, Abdullah et al. (2016) judged the GETAMEL as a robust and adequate model as shown by the goodness of fit test of the research model. They also pointed to some unexpected results and limitations of their method that needed to be further explored. First, against their expectations, CANX was uncorrelated with PEoU. They

suggested that an overall low level of CANX could be the cause because of surveying students from computer-related courses. Second, CEXP and CSE were unexpectedly uncorrelated with PU, which was attributed to characteristics of the e-portfolio that they used and the sample of students from computer-related courses. Overall, GETAMEL seems to better explain PEoU than PU in this study.

Chang et al. (2017) reviewed the GETAMEL, surveying 714 undergraduate students using e-books at universities in Azerbaijan. Chang et al. used the e-book definition by Ngafeeson and Sun (2015), stating that e-books are "a piece of electronic text, regardless of size or digital object used, made available digitally for any device that uses a screen for the purpose of instruction and learning" (p. 56). The results of the study show that CEXP, followed by PENJ, CSE, and CANX, could explain the PEoU of the e-book. SN had no effect on PEoU. The PU could best be predicted by the PENJ, CANX, CEXP, and SN. CSE had no effect on PU. PEoU had no significant influence on PU. Furthermore, PEoU and PU were significant predictors of ItU. In sum, Chang et al (2017) judged the GETAMEL as a robust and adequate model as shown by the goodness of fit test of the research model. They also pointed to some aspects that needed to be addressed in future studies. First, a negative correlation was also found between CANX and PU, although CANX was not included in the Abdullah and Ward (2016) study as a predictor of PU in their GETAMEL because of showing mixed effects on PU. Second, unexpectedly, SN was uncorrelated with PEoU, and CSE was uncorrelated with PU.

Table 2: Overview of the results from the GETAMEL studies on PEoU.

	PEoU	CEXP	CSE	CANX	SN	PENJ
	Abdullah & Ward (2016)	.221	.352	-.199	.195	.341
1	Abdullah et al. (2016)	.421+	.196***	-.017	.157*	.286***
2	Chang et al. (2017)	.496**	.246**	-.151*	.025	.239*
3	Doleck et al. (2018)	.114*	.573***	-.128+	.012	.162*
4	Hajiyev (2018)	.169*	.029	-.284**	.009	.013
5	Kimathi & Zhang (2019)	-.07*	.03	.23***	.10**	.15**
6	Rizun & Strzelecki (2020)	.208*	.288*	-.005	--	.329*
7	Cicha et al. (2021)	.271*	.337*	.027	-.037	.315*
8	Matarirano et al. (2021)	.032	.444***	-.161*	.027	.289**

*Notes: *** ≤ .001; ** ≤ .01; * ≤ .05; + ≤ .10; -- = was not explored; a green background indicates a GETAMEL consistent result; a red background indicates a GETAMEL contradictory result*

Table 3: Overview of the results from the GETAMEL studies on PU.

	PU	CEXP	CSE	CANX	SN	PENJ	PEoU
	Abdullah & Ward (2016)	.169	.174	.070	.301	.452	--
1	Abdullah et al. (2016)	-.191	-.141	--	.123	.365***	.602***
2	Chang et al. (2017)	.181**	.026	-.191*	.213**	.321***	.046
3	Doleck et al. (2018)	.110+	-.092	--	.035	.526***	.109
4	Hajiyev (2018)	.181*	.335***	-.191*	.213**	.323***	.008
5	Kimathi & Zhang (2019)	-.04	-.03	.12***	.25***	.01	.15**
6	Rizun & Strzelecki (2020)	-.102*	.133*	-.095*	--	.645*	.099*
7	Cicha et al. (2021)	-.137*	.194*	-.016	.154*	.587*	.023
8	Matarirano et al. (2021)	.159	-.010	--	.016	.080	.258*

*Notes: *** ≤ .01; ** ≤ .01; * ≤ .05; + ≤ .10; -- = was not explored; a green background indicates a GETAMEL consistent result; a red background indicates a GETAMEL contradictory result*

Table 4: Overview of the results from the GETAMEL studies on AtU, ItU, and AU.

		AtU by		ItU by			AU by
		PU	PEoU	PU	PEoU	AtU	ItU
1	Abdullah et al. (2016)	--	--	.689***	.208*	--	--
2	Chang et al. (2017)	--	--	.241**	.205*	--	--
3	Doleck et al. (2018)	.635***	.300**	.187*	--	.581**	.665**
4	Hajiyev (2018)	.427**	.340**	.277**	--	.454**	--

		*	*	*		*	
5	Kimathi & Zhang (2019)	--	--	.26**	.22**	--	--
6	Rizun & Strzelecki (2020)	.581*	.277*	.233*	--	.638*	.642*
7	Cicha et al. (2021)	.673*	.180*	.311*	--	.494*	.688*
8	Matarirano et al. (2021)	.710***	.126	.38**	.023	.294+	.410***

Notes: *** ≤ .001; ** ≤ .01; * ≤ .05; + ≤ .10; -- = was not explored

Doleck et al. (2018) tested GETAMEL in the context of e-learning with college students (N = 132). The relationships in the postulated model were examined by PLSSEM. The results of the study show that CSE, followed by PENJ, CANX and CEXP explained significant variance in the PEoU. SN had no effect on PEoU. The PU was best predicted by the PENJ. CEXP, SN, and CSE were not significant predictors of PU. PEoU had also no significant influence on PU. In addition, PEoU and PU were significant predictors of AtU, and AtU and PU predicted ItU, and ItU predicted AU. Overall, the findings showed that the external factors of the GETAMEL could predict the core variables of TAM adequately, although not all factors were relevant for the specific model in the study. Thus, Doleck et al. (2018) question the generalizability of the GETAMEL on the basis of their results. They assumed that situational factors, such as voluntariness or personal convictions, have a far greater influence on the intended use than the TAM core constructs (PEoU and PU).

Hajiyev (2018) examined the GETAMEL with undergraduate students (N = 698) using mobile learning in higher education in Azerbaijan. The collected questionnaires were analyzed using a structural equation model. Given the focus on mobile learning, Hajiyev replaced CANX with information and communication technologies anxiety (ICTA). Hajiyev also judged the GETAMEL as a robust and adequate model as shown by the goodness of fit test of the research model, but not all relationships between the five proposed predictors and the TAM constructs PEoU and PU were significant. All five external factors explained significant variance in PU, but only CEXP and ICTA were significant predictors of PEoU. Furthermore, PEoU and PU were significant predictors of AtU, and PU and AtU predicted the behavioral ItU mobile learning. Hajiyev (2018) concluded that PU plays a far greater role in mobile learning than PEoU.

Kimathi and Zhang (2019) examined the GETAMEL with undergraduate students (N = 172) using e-learning in higher education in Tanzania. Questionnaire data were analyzed using structural equation modelling. Kimathi and Zhang also judged the GETAMEL as a robust and adequate model as shown by the goodness of fit test of the research model, but not all relationships between the five proposed predictors and the TAM constructs PEoU and PU were significant. Only two factors played a significant role in predicting PU, SN and CANX, and four factors in predicting PEoU, SN, CEXP, PENJ, and CANX. In addition, the ItU e-learning was predicted by PU and PEoU. PEoU was also significantly related to PU. Some questions arise looking at the data of Kimathi and Zhang. First, the means of items seem to be incorrect because there are many item means at the end of the scoring range = (5) or even above with comparable high SDs (approx. 1.00). Second, the correlations between variables are very different from all other GETAMEL studies. Only few notable small- to medium-sized correlations are shown compared to other studies that reported more significant, stronger correlations. Thus, the reliability of the analysis is questionable.

Rizun and Strzelecki (2019) tested the GETAMEL in the context of distance learning adoption in the COVID-19 pandemic with undergraduate and graduate university students at a Polish university (N = 1,672). SN was omitted from the investigation because of "the mandatory character of distance course during COVID-19 pandemic" (p. 8). The relationships in the postulated model were examined by using PLSSEM. The model was verified. The influence of PEoU, CEXP, CANX, PENJ, and CSE on PU was confirmed. The influence of CEXP, PENJ, and CSE on PEoU could also be confirmed. CANX had no effect on PEoU. In addition, PU and PEoU predicted the behavioral AtU, and AtU and PU predicted the behavioral ItU. ItU also predicted AU.

Matarirano et al. (2021) tested an extended GETAMEL in the context of Blackboard Learning Management System adoption with university lecturers (N = 101) at a South African university, which also included the external factors of job relevance, system accessibility and technical support in addition to the five external factors of GETAMEL. The relationships in the postulated model were examined by using structural equation modeling. The model was only partially verified. The results show that CSE, PENJ, and CANX explained significant variance in the PEoU, whereas SN and CEXP did not. The PU was best predicted by PEoU; None of the five GETAMEL external factors were significant predictors of PU. Furthermore, PU predicted the behavioral AtU but not PEoU, and AtU and PU predicted the behavioral ItU. ItU predicted AU. Overall, the findings show that the

external factors of the GETAMEL could not sufficiently predict the core variables of TAM. Thus, Matarirano et al. (2021) question the generalizability of the GETAMEL to lecturers, given that it was developed for students. In another study, the model was partially verified in the context of the COVID-19 pandemic with first-year undergraduate university students in Poland (Cicha et al., 2021). In contrast to the other studies, which investigated the experience of people with a technical system, Cicha et al. (2021) investigated the students' expectations toward online learning before experiencing the technical systems in use at an institution. The influence of CEXP, SN, PENJ, and CSE on PU was confirmed but not CANX. The influence of CEXP, PENJ, and CSE on PEoU could also be confirmed. SN and CANX had no effect on PEoU. Moreover, PU and PEoU predicted the behavioral AtU, and AtU and PU predicted the behavioral ItU. ItU also predicted AU.

In summary, the studies by Abdullah et al. (2016), Chang et al. (2017) and Hajiyev (2018) verified the GETAMEL. Doleck et al. (2018), however, questioned the generalizability of the model because their results could not confirm significant relationships between all five external factors to the core constructs. With the exception of Matarirano et al. (2021), all other studies sampled college-age or university students. Hence, no study exists that has tested the GETAMEL in an entrepreneurial context. This current study is intended to address this research gap.

Research Question And Expectations
The aim of this study was to examine the predictive power of the five external factors as proposed by the GETAMEL on the PEoU and the PU of an e-learning environment about hand hygiene in a clinical operational context. Therefore, data were analyzed by correlations and multiple regression analyses.

We expected that CEXP, CSE, CANX, SN, and PENJ could model the PEoU and the PU of the examined e-learning environment showing a high multiple correlation. Furthermore, according to GETAMEL, CANX, CSE, SN, and PENJ were expected to have a positive relation with both PEoU and PU, and CANX was expected to show a negative relation to PEoU but a non-existing relation to PU.

Previous research has shown a significant relationship between PEoU and PU (Chang et al., 2017), implying that those who find the handling of a new technological system easy also strongly tend to find it useful (Davis, 1986; Davis, 1989; Davis et al., 1989). Thus, a substantial correlation should be revealed in the data.

In addition, according to the TAM, PEoU and PU have a direct influence on AtU, which in turn influences the ItU together with PU. Thus, it was expected that PEoU and PU should model the AtU showing a high multiple correlation. In addition, AtU and PU were expected to account for significant variance in ItU.

To test whether AtU is an essential part of the model, the modelling of ItU by AtU und PU was compared with the modelling of ItU by PEoU und PU. AtU should improve the prediction of ItU.

Method
Sample
The data for analyses were obtained from 120 employees and students from the medical facilities in the Oberpfalz district in the German Federal State of Bavaria. Seven participants provided incomplete data sets. Thus, they were excluded from the analyses. Table 5 shows the descriptive data of the remaining sample of 113 participants. Employees working in the fields of geriatric medicine and forensics and students enrolled in the Vocational School for Nursing and Nursing Assistance participated in the study. The sample consisted of 55.8% females (N = 63) and 44.2% males (N = 50). To guarantee the anonymity of the employees, age needed to be indicated by means of age ranges at the request of the company.

Table 5: The number and percentage of participants in each age and occupational group (N = 113).

Age	N	%	Occupational groups	N	%
15-20	13	11.5	Doctors	9	8.0
21-26	21	18.6	Teachers	1	0.9
27-32	21	18.6	Care and educational services	69	61.1
33-38	8	7.1	Social education workers	4	3.5
39-44	19	16.8	Therapists	6	5.3
45-50	11	9.7	Other groups (including students)	24	21.2
51-56	13	11.5			
57-62	6	5.3			
63-68	1	0.9			

Responding to the questionnaire was not possible without completing the e-learning. Thus, we assumed that 120 respondents participated in both the e-learning and the survey. Only 113 respondents could be included in the analyses because of missing data. The number of dropouts and the number of people who completed the e-learning but did not take part in the questionnaire could not be recorded by the system.

Description of the online training about hand hygiene
The online training thematically explains all important basics of hand hygiene. An instruction about hand hygiene is obligatory for all employees who come into contact with patients and must be completed annually. To date, this has taken the form of classroom training or instruction on the wards. To ensure that every respondent has access to the learning module, it was made available on the in-house learning platform (Moodle). The training was created using the Articulate Storyline 2 authoring tool and comprised seven chapters. To familiarize the learners with interacting and navigating in the online training, all necessary information was conveyed in the first Chapter "Introduction". In chapters 2-6, the learner was informed about the content: "What is hygienic hand disinfection?", "When is hand disinfection necessary?", "How to carry out hygienic hand disinfection", "Everything about disinfectants", and "Who has to carry out hand disinfection?" The last Chapter, "Final questions", contained a 13-items multiple-choice knowledge test. On the last page of the chapter after the knowledge test, respondents were informed to click on a link to the survey about e-learning acceptance and that receiving the training certificate was contingent on completing the survey. The total learning time was estimated at 15 min.

Navigation in the online training was kept simple by a pair of buttons functioning as turning pages. Clicking the next button presented the next page in the page order, and clicking the back button presented the previous page. Clicking the menu button presented an overview of the seven chapters of the online training, which could be clicked on to easily jump to the desired chapter. The structure of a chapter was always the same throughout the entire online training. A chapter consisted of an opening and a closing slide. The former presented the topic and the latter gave the learner the opportunity to recapitulate the learned content before beginning with the next chapter. Between the beginning and end of the chapter, the instruction was presented. Learning questions were implemented in addition to the content to activate users and existing knowledge.

The core instructions of the chapters were videos, that is, spoken text was combined with static and dynamic visualizations. The automatic playback of the videos could be paused with a pause button. For a clear presentation and to improve the practical relevance, pictures from everyday clinic life were mainly used. In addition, the speaker's text could be presented to the left of the video as online text. Generally, the entire text of the online training, including the instructions, was available as on-screen text and narration. Therefore, the presentation mode - auditory, visual, or in combination - could be freely chosen by the learner.

Procedure and measurements
The study took place from June to August, 2018. Basic information about the project was sent to the employees/students in advance by the station managers of the participating departments. On the 1st of June, 2018, the study started by sending an e-mail with an access link to the online training about hand hygiene, information on the study, and a process description. After activating the access link, the participant was asked to log on to the in-house learning platform (Moodle), whereupon the online training started automatically. An online questionnaire about e-learning acceptance was provided after completing the online training via a link on the last page of the training. The questionnaire could only be completed during working hours because it was only available in the company, as was the online training.

Table 6: Original untranslated items used for measuring the variables.

Scale	Items	Reference
Computer-related experience	I enjoy using computers.	Lee et al. (2011)
	Working with a computer would make me very nervous.	
	I get a sinking feeling when I think of trying to use a computer.	
	Computers make me feel uneasy and confused.	
Computer anxiety	I am worried that I do not know how to make the computer finish the things I want to do.	Chen & Tseng (2012)
	I feel troubled regarding some work that can only be completed by using a computer.	
	When I face error messages on the computer, I do not know what to do.	
	I feel scared in terms of operating products related to computer and	

	technology.	
Comput-er-related self-efficacy	I could complete my learning activities using the e-learning system if I had never used a system like it before.	Compeau & Higgins (1995)
	I could complete my learning activities using the e-learning system if I had only the system manuals for reference.	
	I could complete my learning activities using the e-learning system if I had seen someone else using it before trying it myself.	
	I could complete my learning activities using the e-learning system if I had just the built-in-help facility for assistance.	
Subjective norm	People who influence my behavior think that I should use the system.	Venkatesh & Bala (2008)
	People who are important to me think that I should use the system.	
	The senior management of this business has been helpful in the use of the system.	
	In general, the organization has supported the use of the system.	
Perceived enjoyment	I find using the e-learning system to be enjoyable.	Davis et al. (1992)
	The actual process of using the e-learning system is pleasant.	Lee et al. (2005)
	I have fun using the e-learning system.	Lee et al. (2005)
Perceived ease of use	My Interaction with the system would be clear and understandable.	Venkatesh & Davis (2000)
	Interacting with the system does not require a lot of my mental effort.	
	I find the system to be easy to use.	
	I find it easy to get the system to do what I want it to do	
Perceived usefulness	Using the e-learning system improves my learning performance.	Cheng (2012)
	Using the e-learning system enhances my learning effectiveness.	
	Using the e-learning system gives me greater control over learning.	
	I find the system to be useful in my learning.	
Attitude towards using	Using the system is a good idea	Calisir et al. (2014)
	Using the system is a wise idea	
	I like the idea of using the system	
	Using the system is unpleasant	
Intension to use	I will use the e-learning system on a regular basis in future.	Cheng (2012)
	I will frequently use the e-learning system in future.	
	I will strongly recommend others to use the e-learning system.	

In correspondence to the GETAMEL, the questionnaire was composed of five scales for assessing the external factors, which are (1) CEXP, (2) CSE, (3) CANX, (4) SN, and (5) PENJ, and four scales for assessing the core constructs of technology acceptance, which are (1) PEoU, (2) PU, (3) AtU, and (4) ItU. Each scale comprised three or four items, which were statements that could be rated on a 5-point Likert scale from "totally disagree" to "totally agree" (see Table 6). The scales were translated into German, and the standard reverse translation method (Mullen, 1995; Sperber et al., 1994) was used to ensure that the original meaning was retained. To ensure the quality of the translation, the results were checked by an independent person. For the operationalization of the constructs, instruments from relevant studies of previous research were used. The 35 selected items are presented in Table 6 together with the corresponding sources.

Table 7 presents the scale features, based on the data of 113 online students. For all scales used in the questionnaire, the individual scores per scale were calculated as means of item ratings. Given that all items were rated on a 5-point Likert scale, all scores ranged between 1 and 5. Higher scores reflect higher feature levels of variables.

Table 7: Means, standard deviations, and the potential score range of the used scales are shown (N = 113).

			Number of items	Score range	M	SD	Cronbach's alpha
1	Computer-related experience	CEXP	4	1-5	4.40	.60	.82
2	Computer anxiety	CANX	4	1-5	1.74	.76	.87
3	Computer-related self-efficacy	CSE	4	1-5	3.86	1.04	.83

4	Subjective norm	SN	4	1-5	2.72	.89	.70
5	Perceived enjoyment	PENJ	3	1-5	3.63	1.01	.93
6	Perceived ease of use	PEoU	4	1-5	4.13	.70	.85
7	Perceived usefulness	PU	4	1-5	3.42	.93	.93
8	Attitude towards using	AtU	4	1-5	3.94	.89	.89
9	Intension to use	ItU	3	1-5	3.63	1.05	.96

Results

Correlations between variables

Table 8 shows the 36 correlations calculated between the investigated variables. Correlations were tested for significance using non-corrected Alpha levels. We did not apply a cumulative Type I error correction because this procedure would have resulted in substantial number of nonsignificant correlations. Such a procedure would not be helpful with interpreting the results of the subsequent regression analyses.

Table 8: Correlation matrix of variables

			2 CSE	3 SN	4 PENJ	5 CANX	6 PEoU	7 PU	8 AtU	9 ItU
1	Computer-related experience	CEXP	.32***	.24**	.44***	-.71***	.53***	.47***	.53***	.46***
2	Computer self-efficacy	CSE		.16$^+$	.15	-.18$^+$	.32***	.14$^+$	.21*	.15$^+$
3	Subjective norm	SN			.33***	-.14	.21*	.39***	.32***	.33***
4	Perceived enjoyment	PENJ				-.33***	.53***	.74***	.68***	.66***
5	Computer anxiety	CANX					-.48***	-.33***	-.36***	-.36***
6	Perceived ease of use	PEoU						.45***	.50***	.44***
7	Perceived usefulness	PU							.80***	.76***
8	Attitude towards using	AtU								.79***
9	Intension to use	ItU								

Note. $^+$ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$. 1-5 are external variables, correlations were tested double-sided; 6-9 are dependent variables, correlations were tested single-sided due to the explicit hypotheses.

The pattern of correlations between the external variables is very clear. CEXP correlated with all other external variables reflecting overall medium-sized to large-sized effects (Gignac & Szodorai, 2016). The higher the level of CEXP, the higher the level of CSE, SN, and PENJ but the lower the level of CANX. The correlation between CEXP and CANX was very high. In addition, SN correlated positively with PENJ, and PENJ negatively with CANX. The more online students reported to have important others valuing and supporting e-learning, the higher was their PENJ, and the higher their level of PENJ, the lower their CANX.

Large-sized, positive correlations were found between all dependent acceptance variables (Gignac & Szodorai, 2016). Although PEoU correlated with the other variables in the range between .44 and .50, the correlations between PU, AtU, and ItU were much larger in the range of .76 to .80. Medium-sized to large-sized correlations were mainly found between the external and the predicted variables (Gignac & Szodorai, 2016). Only two of the 20 correlations were not significant, and they were with CSE. Self-efficacy was positively but nonsignificantly correlated with PU and ItU. The strongest correlations with the dependent variables were with CEXP and PENJ.

Regression Analyses

All technology acceptance variables could be modelled by multiple linear regressions with the external factors proposed by Abdullah and Ward (2016) (see Tables 9 and 10). All forced entry models consistently resulted in large multiple correlations between .66 and .82 and an explained variance between .43 and .67.

PEoU was best modelled by CEXP, CANX, CSE, and PENJ. The higher the level of CEXP, CSE, and PENJ, the lower the level of CANX, and the higher the PEoU. PENJ showed the highest predictive power on PEoU. SN played no role in the regression model. This result is attributed to the medium-sized correlations of SN with CEXP and PENJ, overlaying the effect of SN on PEoU as reflected by the small correlation between them.

PU was best modelled by CEXP, PENJ, and SN. The higher the level of CEXP, PENJ, and SN, the higher the PU. Similar to the previous model, PENJ showed the highest predictive power for PU. CANX played no role in the model. This result is attributed to the large-sized correlations of CANX with CEXP ($r = -0.71$), overlaying the effect of CANX on PU as reflected by the small correlation between CANX and PU (see Table 10).

Table 9: Summary of models

	R	R^2	Adjusted R^2	SE	DW	F	df_1	df_2	$p <$
Perceived ease of use	.66	.43	.41	.54	2.11	16.42	5	107	.001
Perceived usefulness	.77	.59	.57	.61	2.23	30.78	5	107	.001
Attitude towards using	.82	.67	.66	.52	1.36	110.76	2	110	.001
Intention to use (by AtU & PU)	.82	.67	.66	.61	1.42	111.21	2	110	.001
Intention to use (by PEoU & PU)	.77	.59	.58	.68	1.45	77.80	2	110	.001

In reference to PU and PEoU as predictors, the resulting models of AtU and ItU were very similar. The higher the PU, the higher the AtU and ItU. PEoU also remained significant in the models, but its influence was only about 20-25% of the effect of PU. In reference to AtU and PU, the resulting model of ItU was strongly predictive. The higher the AtU and PU, the higher the ItU. Despite the high correlation between PU and AtU, PU played a significant role in the model.

Table 10: Results of the multiple linear regression analyses

		B	SE	ß	t	df	p	Tolerance
Perceived ease of use	(Constant)	2.20	.66		3.33	107	.001	
	Computer experience	.21	.13	.18	1.59	107	.115	.42
	Computer anxiety	-.18	.10	-.20	-1.88	107	.063	.49
	Computer self-efficacy	.11	.05	.17	2.16	107	.033	.88
	Subjective norm	-.01	.06	-.02	-.20	107	.846	.97
	Perceived enjoyment	.26	.06	.37	4.40	107	.001	.75
Perceived usefulness	(Constant)	-.26	.75		-.35	107	.729	
	Computer experience	.28	.15	.18	1.88	107	.063	.42
	Computer anxiety	.02	.11	.02	.22	107	.828	.49
	Computer self-efficacy	-.03	.06	-.03	-.45	107	.656	.88
	Subjective norm	.15	.07	.15	2.21	107	.030	.87
	Perceived Enjoyment	.58	.07	.63	8.70	107	.001	.75
Attitude towards using e-learning	(Constant)	.67	.30		2.22	110	.028	
	Perceived ease of use	.22	.08	.17	2.81	110	.006	.80
	Perceived usefulness	.69	-06	.73	11.82	110	.000	.80
Intention to use e-learning	(Constant)	-.09	.26		-.32	110	.746	
	Attitude towards using	.61	.11	.52	5.64	110	.000	.36
	Perceived usefulness	.38	.10	.34	3.71	110	.000	.36
Intention to use e-learning	(Constant)	.17	.39		.42	110	.676	
	Perceived ease of use	.19	.10	.12	1.81	110	.074	.80
	Perceived usefulness	.79	.08	.70	10.24	110	.001	.80
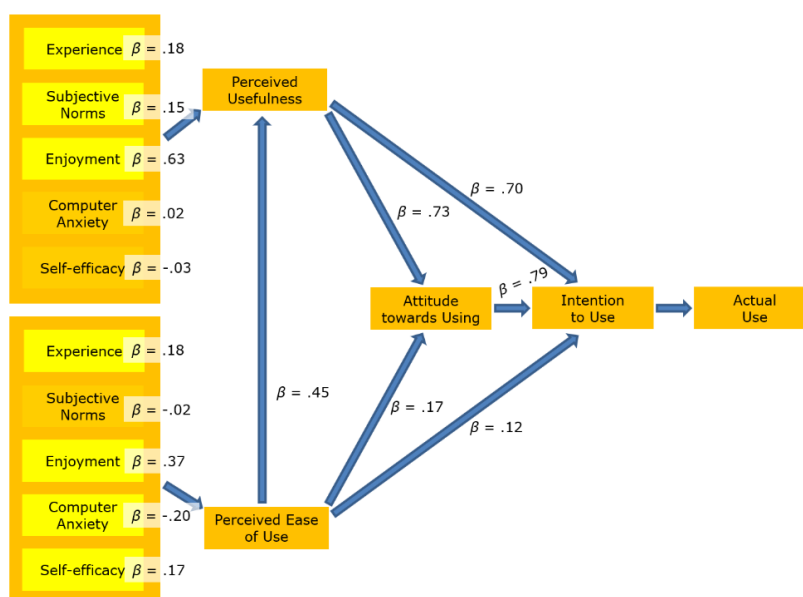
Figure 2: The GETAMEL with the beta coefficients found in this study.

Self-correlation, homoscedasticity, and non-collinearity

The self-correlation of residuals per regression model was tested with the Durbin-Watson test. Values in the interval of 1.5 to 2.5 indicate the non-existence of self-correlations. The value of two out of four of the resulting regression models were within the acceptable range. Hence the absence of self-correlation of residuals is assumed for these models (see Table 9). Three models predicting AtU and ItU lied just below 1.5. Thus, results should be interpreted with caution.

Homoscedasticity, tested by the Koenker test (Koenker, 1981), was not violated for PEoU ($\lambda^2 = 5.80$, $df = 5$, $p = .33$), PU ($\lambda^2 = 5.56$, $df = 5$, $p = .35$), AtU ($\lambda^2 = 1.90$, $df = 2$, $p = .39$), and ItU (modelled by AtU and PU: $\lambda^2 = .85$, $df = 2$, $p = .65$, and modelled by PU and PEoU: $\lambda^2 = 2.26$, $df = 2$, $p = .33$).

Non-collinearity focuses on the correlations between predictors and could be controlled by the statistic of tolerance. Values smaller than .10 are indicative of collinearity of predictors, and values near 1 are unproblematic. The tolerance indices of all regression models suggest non-collinearity of predictors.

Discussion

The aim of this paper was to review the GETAMEL, focusing on an e-learning environment about hand hygiene in a clinical operational context. Overall, our expectations were confirmed that computer-related experience, computer-related self-efficacy, computer anxiety, social norm, and perceived enjoyment could model the perceived ease of use and the perceived usefulness as indicated by the large multiple correlations and the amount of explained variance. Our findings are in line with the GETAMEL reviews by Abdullah et al. (2016), Chang et al. (2017), Doleck et al. (2018), Hajiyev (2018), and Kimathi and Zhang (2019). However, the results of the present study revealed that not every external factor had the expected relationship to the core constructs of the TAM. This study found the following expected relationships consistent with previous studies:

- Computer-related experience and PEoU (positive)
- Computer anxiety and PEoU (negative)
- Computer-related self-efficacy and PEoU (positive)
- Subjective Norm and PEoU (positive)
- Perceived enjoyment and PEoU (positive)
- Computer-related experience and PU (positive)
- Computer anxiety and PU (like in the GETAMEL, a non-existing relationship was expected)
- Subjective norm and PU (positive)
- Perceived enjoyment and PU (positive)

Note that the relationship of computer anxiety and perceived usefulness was not included in the GETAMEL, but it was analyzed in review studies like Chang et al. (2017), Hajiyev (2018), and Kimathi and Zhang (2019). Subjective norm is listed above because an essential correlation with perceived ease of use was found. All other

listed variables were mainly strong correlates and explained significant variance in the regression models. The expected relationships between computer self-efficacy and perceived usefulness were not supported by the results and thus not consistent with previous studies. Self-efficacy was only marginally correlated with perceived usefulness, but it was not a significant predictor in the regression model.

In sum, showing not every external factor as relevant corresponds to the GETAMEL reviews by Abdullah et al. (2016), Chang et al. (2017), Doleck et al. (2018), Hajiyev (2018), and Kimathi and Zhang (2019) and thus seems to be a general result of GETAMEL reviews. Therefore, Doleck et al. (2018) questioned the generalizability of the model. Moreover, it was suggested to expand research to clear inconsistencies as well to consider alternative external factors in face of the diversity of technical applications with various functions (e.g., Abdullah et al., 2016).

As hypothesized and according to the TAM and published studies (Chang et al., 2017; King & He, 2006; Schepers & Wetzels, 2007; Scherer et al., 2019; Šumak et al., 2011), a substantial correlation was found between perceived ease of use and perceived usefulness, suggesting that those who found the handling of the new technological application easy also strongly tend to find it useful (Davis, 1986; Davis, 1989; Davis et al., 1989). Moreover, perceived ease of use and perceived usefulness had also a high predictive power on the attitude towards using the e-learning environment, which together with perceived usefulness was highly predictive of the intended use of e-learning.

The results also show that the attitude and the intention towards using e-learning are equally explained by similar linear multiple regression models comprising perceived ease of use and perceived usefulness as predictors. Perceived usefulness was the strongest predictor in both models. In addition, attitude and intention towards using the e-learning highly correlated. From an empirical perspective, our findings confirm that one of the two TAM components can be omitted, as was proposed in some studies (e.g., Abdullah et al., 2016; Bhatiasevi, 2011; Chen et al., 2013; Giovanis et al., 2012; Hussein et al., 2007; Lee, 2006; Liu, 2010; Macharia & Nyakwende, 2009; Tobing et al., 2008; Venkatesh et al., 2003; Wang & Wang, 2009; Yi & Hwang, 2003). Note that the suggestions in the literature were grounded on weak relationships between the constructs perceived ease of use, perceived usefulness and attitude towards using and weak relationships between attitude and intention towards using. In this study, the attitude measure could be omitted because it failed to increase model fit: Perceived ease of use and perceived usefulness equally well "predicted" attitude towards using and intention towards using.

Perceived enjoyment, perceived ease of use, and perceived usability

Perceived enjoyment is a crucial factor in GETAMEL and other acceptance models (Abdullah & Ward, 2016). In the present study, it was an essential factor for explaining variance in perceived ease of use and perceived usefulness (Abdullah & Ward, 2016). However, it is not a typical external factor like the others that were assessed. Most of external factors in GETAMEL focus on user characteristics (i.e., computer-related experience, computer-related self-efficacy, computer anxiety, social norm), but perceived enjoyment forms only when interacting with a system, similar to perceived ease of use and perceived usability. Thus, excluding perceived enjoyment as an external factor might be preferable because assessing it in advance of technology use to predict technology acceptance is not possible. Instead, it could be moved to the TAM on the level with perceived ease of use and perceived usefulness. Thereby, it might be viewed as an additional variable influencing perceived usefulness together with perceived ease of use but also as an antecedent variable influencing perceived ease of use (Sung & Yun, 2010). Perceived enjoyment assesses the affective-motivational aspect of usage, whereas perceived ease of use assesses the cognitive aspect of effortless usage. According to Sung and Yun (2010), both constructs correlate, resembling, for example, that higher enjoyment leads users to perceive a task as less difficult, which in turn makes users underestimate the task difficulty.

Limitations

The present study had some obvious limitations that must be addressed. First, the sample was generated ad hoc and consisted of the first students encountering the new e-learning training about hand hygiene. Thus, our findings might not generalize to other operational contexts. Second, the measures of variables were not optimal. We administered scales that were frequently used in the empirical literature, but the instruments should be evaluated. For example, inspecting the measures of computer-related experience and computer anxiety, all items of the computer-related experience scale focus on emotions, some of which appear to overlap with items in the computer anxiety measure. Researchers should ensure that measured constructs are orthogonal, which would also make it easier to administer SEM analyses. Third, the cross-sectional design of the study obtained data at one timepoint. Thus, the method does not address variables that change over time while using the system, and it does not address time relations between predictors and predicted variables.

Conclusion

In addition to identifying alternative external factors that could improve the understanding of how technology acceptance develops or expanding the research to address the inconsistencies in the effects of external factors, we recommend another four approaches to investigating technology acceptance to advance empirical knowledge.

(1) More studies are needed that analyze technology acceptance on a single theoretical background (e.g., the GETAMEL) using one sample that is confronted with various technological and functional devices. This method could provide information about the extent of technology acceptance depending on the type of technological device and function. In addition, the technology acceptance data for each device should be obtained by cross-sectional designs. Using the same cross-sectional research design corresponds to the vast majority of research designs used in empirical studies about technology acceptance. This approach could elaborate consistencies and inconsistencies in external factors and the modelled predictors of external factors reported in the literature.

(2) Empirical testing of the model in different teaching contexts is needed (Doleck et al., 2018). The extent that the GETAMEL can be generalized and applied to other online teaching formats (Doleck et al., 2018) is still unknown. Technology acceptance should be explored based on a task analysis that identifies the requirements of appropriate use for users. On the basis of task analyses, technological devices and their purpose could be compared on the level of explicit task dimensions. This approach could provide a better understanding of which user characteristics might affect technology acceptance and on which external factors to regress technology acceptance. Thus, more studies are needed that focus on task analysis.

(3) Consistent with other studies (Goh et al., 2014; Lee et al., 2011; Sek et al., 2010), Granić and Maragunić (2019) indicated a lack of longitudinal studies. Therefore, data for external factors should be collected before participants are confronted with the type of technological advice. Using cross-sectional designs only leads to model fits without grounds for causal interpretations and does not address changes in external factors while experiencing a technological device.

(4) Perceived usefulness and perceived ease of use should not be regressed on perceived enjoyment as an external factor. We consider perceived enjoyment an affective-motivational usability feature, one among other characteristics attributed to a technological experience that develops when interacting with the device. Enjoyment is not a typical user characteristic like computer-related experience, computer-related self-efficacy, computer anxiety or social norm. Therefore, perceived enjoyment might be treated like the TAM core constructs perceived ease of use and perceived usability.

In general, the external factors proposed by the GETAMEL are altogether considered a fruitful starting point for analyzing the influence of external factors on technology acceptance.

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Appendix

Table A: The original English items and their German translations are shown. Items were rated on a 5-point Likert scale coded from 1 (totally disagree = trifft überhaupt nicht zu) to 5 (totally agree = trifft völlig zu)

Scale	Original English items	German items used for the study
Computer experience	I enjoy using computers.	Mir macht es Spaß, Computer zu benutzen.
	Working with a computer would make me very nervous.	Mit einem Computer zu arbeiten, würde mich sehr nervös machen.
	I get a sinking feeling when I think of trying to use a computer.	Wenn ich daran denke, wie ich versuche, einen Computer zu bedienen, bekomme ich ein flaues Gefühl im Magen.
	Computers make me feel uneasy and confused.	Computer beunruhigen und verwirren mich.
Computer anxiety	I am worried that I do not know how to make the computer finish the things I want to do.	Ich mache mir Sorgen, dass ich nicht weiß, wie ich den Computer dazu bringen kann, die Dinge zu erledigen, die ich machen möchte.
	I feel troubled regarding some work that can only be completed by using a computer.	Arbeiten, die nur mit dem Computer durchgeführt werden können, beunruhigen mich.
	When I face error messages on the computer, I do not know what to do.	Wenn ich mit Fehlermeldungen am Computer konfrontiert werde, weiß ich nicht, was zu tun ist.
	I feel scared in terms of operating products related to computer and technology.	Ich habe Angst, Produkte zu nutzen, die in Zusammenhang mit Computer und Technologie stehen.
Computer self-efficacy	I could complete my learning activities using the e-learning system if I had never used a system like it before.	Ich könnte meine Lernaktivitäten mit dem E-Learning-System abschließen, auch wenn ich noch nie zuvor ein E-Learning benutzt hätte.
	I could complete my learning activities using the e-learning system if I had only the system manuals for reference.	Ich könnte meine Lernaktivitäten mit dem E-Learning-System abschließen, wenn ich lediglich die Anleitung zur Hilfe hätte.
	I could complete my learning activities using the e-learning system if I had seen someone else using it before trying it myself.	Ich könnte meine Lernaktivitäten mit dem E-Learning-System abschließen, wenn ich jemanden zuvor bei dessen Verwendung zugesehen hätte.
	I could complete my learning activities using the e-learning system if I had just the built-in-help facility for assistance.	Ich könnte meine Lernaktivitäten mithilfe des E-Learning-Systems abschließen, wenn ich lediglich die im System integrierte Hilfe zur Unterstützung hätte.
Subjective norm	People who influence my behavior think that I should use the system.	Personen, die mein Verhalten beeinflussen, denken, dass ich das ELearning benutzen sollte.
	People who are important to me think that I should use the system.	Personen, die wichtig für mich sind, denken, dass ich das E-Learning nutzen sollte.
	The senior management of this business has been helpful in the use of the system.	Meine Vorgesetzten waren bei der Verwendung des E-Learning hilfreich.
	In general, the organization has supported the use of the system.	Im Allgemeinen unterstützte die Organisation die Nutzung des E-Learning.
Perceived enjoyment	I find using the e-learning system to be enjoyable.	Ich finde, dass das E-Learning sehr unterhaltsam ist.
	The actual process of using the e-learning system is pleasant.	Die tatsächliche Nutzung des ELearning ist angenehm.
	I have fun using the e-learning system.	Ich habe Spaß, das E-Learning zu nutzen.
Perceived ease of use	My Interaction with the system would be clear and understandable.	Der Umgang mit dem E-Learning war klar und verständlich.
	Interacting with the system does not require a lot of my mental effort.	Der Umgang mit dem E-Learning erfordert von mir keine geistige Anstrengung.
	I find the system to be easy to use.	Ich finde das E-Learning einfach zu Bedienen.
	I find it easy to get the system to do what I want it to do.	Ich finde es einfach, das E-Learning dazu zu bringen, das zu tun, was ich möchte.
Perceived	Using the e-learning system improves my	Die Verwendung des E-Learning verbessert

usefull-ness	learning performance.	meine Lernleistung.
	Using the e-learning system enhances my learning effectiveness.	Die Verwendung des E-Learning erhöht meine Lerneffektivität.
	Using the e-learning system gives me greater control over learning.	Durch den Einsatz des E-Learning habe ich mehr Kontrolle über das Lernen.
	I find the system to be useful in my learning.	Ich finde das System nützlich für mein Lernen.
Attitude to use	Using the system is a good idea	E-Learning zu nutzen, ist eine gute Idee.
	Using the system is a wise idea	E-Learning zu nutzen, ist eine kluge Idee.
	I Like the idea of using the system	Ich mag die Idee, E-Learning zu Nutzen.
	Using the system is unpleasant	E-Learning zu nutzen, ist unangenehm.
Intension to use	I will use the e-learning system on a regular basis in future.	Ich werde E-Learning in der Zukunft regelmäßig nutzen.
	I will frequently use the e-learning system in future.	Ich werde E-Learning in der Zukunft häufiger nutzen.
	I will strongly recommend others to use the e-learning system.	Ich werde anderen besonders empfehlen, das E-Learning zu nutzen.

PERCEPTIONS OF COLLEGE TEACHERS TOWARDS ONLINE LEARNING AT UNDER-GRADUATE LEVEL

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ABSTRACT
Online learning is an educational approach that leverages digital platforms to deliver courses and educational resources to learners. It provides the opportunity to acquire knowledge and skills remotely, independently of traditional classroom settings, allowing for self-paced learning and access to a diverse range of subjects and topics. The objective of the research study was to investigate the perceptions of college teachers towards online learning at under-graduate level. Total 312 college teachers of 'Government-Aided General Degree Colleges' of West Bengal were participants of this study. Self-developed five-point attitude scale was used in the study as research tool. In this study, 52.24% college teachers agreed and 15.39% college teachers strongly agreed that courses can be completed faster through online teaching-learning process than chalk and talk teaching-learning process. This suggests that online education can offer a more streamlined and efficient learning experience, allowing students to progress through their courses at a faster pace. In this study, 44.55% college teachers agreed and 21.47% college teachers strongly agreed that online classroom process was less effective as majority of the learners engaged as passive listeners. This suggests the importance of incorporating interactive and engaging instructional strategies in online teaching to enhance learner participation and involvement. In this study, 25.96% college teachers agreed and 62.82% college teachers strongly agreed that sometimes online classes could not be able to conduct due to network problems. This indicates the need for institutions to ensure a reliable technological infrastructure and provide technical support to address any issues that may arise during online classes. In this study, 55.77% college teachers agreed and 21.15% college teachers strongly agreed that online education can be made more attractive through high technological skills. This emphasizes the importance of equipping both teachers and students with adequate technological literacy and skills to maximize the benefits of online learning.
Keywords: College Teachers, Online Learning, Perceptions, Under-Graduate Level.

Introduction

The term 'Online learning', often famous as 'e-learning' refers to a mode of education where instruction and learning take place primarily through digital technologies and the internet (Allen & Seaman, 2017). It offers learners the flexibility to access educational content and participate in courses from anywhere and at any time, eliminating the constraints of traditional face-to-face classroom settings (Bates, 2019). In recent years, the advent of online education has been revolutionary in the educational system, changing the nature of how information is imparted and acquired (Allen & Seaman, 2017). Rapid technological advancements and ubiquitous internet accessibility have propelled online learning platforms to the forefront of the educational landscape (Karsenti & Bugmann, 2020). With the advent of the COVID-19 epidemic, the significance of online learning has been further amplified, as it became an essential mode of instruction for educational institutions worldwide. Against this backdrop, exploring the perceptions of college teachers regarding online learning at the undergraduate level has become a crucial area of research.

Understanding college teachers' perspectives is fundamental in assessing the efficacy and acceptance of online learning as a viable alternative or complement to traditional face-to-face instruction (Bates, 2019). Their perceptions provide valuable insights into the opportunities, challenges, and potential benefits associated with online learning in the context of undergraduate education (Lee & Choi, 2019). Additionally, their feedback serves as a valuable resource for refining online pedagogical strategies and shaping policies that optimize the learning experience for students.

Previous research has investigated the perceptions of college teachers towards online learning, encompassing various aspects such as instructional approaches, technological infrastructure, faculty training, student

engagement, and assessment methods (Khlaif & Khlaif, 2019). However, it is crucial to recognize that perceptions are context-dependent and may vary across disciplines, teaching experience levels, and cultural backgrounds (Margaryan, Littlejohn & Vojt, 2011). Therefore, a comprehensive understanding of college teachers' perceptions specific to online learning at the undergraduate level is necessary.

The study investigated the perceptions of college teachers towards online learning at the undergraduate level (Alqahtani, 2021). By exploring their attitudes, beliefs, and concerns, we can gain valuable insights into the potential advantages and challenges associated with online learning, enabling educational institutions to refine their strategies and support systems accordingly.

The results obtained from this investigation will make a valuable addition to the current corpus of information regarding online education and give valuable guidance to educational institutions, policymakers, and administrators in effectively implementing online learning at the undergraduate level (Picciano, 2017). Furthermore, the results will inform the development of targeted interventions and training programmes to empower college teachers in navigating the online teaching environment with confidence and expertise.

Rationale of the Study

The development of online learning has been a significant catalyst for change in the field of education, fundamentally altering the manner in which individuals obtain knowledge and develop competencies. This mode of learning harnesses digital technologies and the internet to provide flexible and accessible educational opportunities. Online learning has gained significant momentum in recent years, transforming the landscape of education and becoming increasingly prevalent in higher education institutions (Allen & Seaman, 2017). However, to ensure successful implementation and maximize the benefits of online learning at the undergraduate level, it is essential to understand the perceptions of college teachers towards this mode of instruction (Bates, 2019). This rationale outlines the reasons for investigating college teachers' perceptions of online learning at the undergraduate level and highlights the potential implications for educational practice.

1. Identify Opportunities and Challenges: Exploring college teachers' perceptions provides valuable insights into the opportunities and challenges associated with online learning in undergraduate education (Picciano, 2017). By understanding their viewpoints, educational institutions can leverage the identified opportunities to enhance the quality of online learning experiences and address the challenges to create a supportive environment for both teachers and students.

2. Enhance Pedagogical Approaches: College teachers' perceptions can inform the development and refinement of effective pedagogical approaches for online learning at the undergraduate level (Lee & Choi, 2019). Understanding their beliefs, attitudes, and concerns allows for the identification of best practices and innovative strategies that promote active engagement, collaboration, and critical thinking among students in the online environment.

3. Tailor Professional Development: The insights gained from investigating college teachers' perceptions of online learning can guide the design and implementation of targeted professional development programmes (Mandernach & Garrett, 2014). By addressing teachers' specific needs and concerns, institutions can provide training opportunities and support systems that enhance their skills, confidence, and competence in delivering high-quality online instruction.

4. Optimize Student Learning Outcomes: The instructional practices of college teachers are significantly influenced by their perceptions, which subsequently have an impact on the learning outcomes of their students (Cho & Heron, 2015). Understanding their perceptions helps identify effective approaches for facilitating student engagement, promoting meaningful interactions, and fostering a sense of community in the online learning environment, ultimately leading to improved student outcomes.

5. Inform Policy and Decision-Making: Insights into college teachers' perceptions of online learning at the undergraduate level can inform institutional policies, decision-making processes, and resource allocation (Majumdar & Kumar, 2019). This knowledge ensures that decisions regarding infrastructure, technological support, faculty workload, and assessment align with the needs and concerns of college teachers, fostering a supportive and conducive online learning environment.

By investigating the perceptions of college teachers towards online learning at the undergraduate level, purpose of this research study is to make a valuable addition to the existing body of literature and provide evidence-based recommendations for improving online learning practices and support mechanisms.

Objective
1. To investigate the perceptions of college teachers towards online learning at under-graduate level.

Research Question
1. What are the perceptions of college teachers towards online learning at under-graduate level?

Methodology
Design: Investigators had used descriptive survey method (using Google form) to collect the relevant data. The study used quantitative research design to analyze the collected data.

Participants: Total 312 college teachers of 'Government-Aided General Degree Colleges' of West Bengal were participants of this study. Investigators had used 'Snow-Ball Sampling Method' for data collection.

Tool: The study utilized a self-developed five-point attitude scale as research tool. Investigators had used internal reliability test to check the reliability of the tool. The reliability of the self-developed tool was 0.76 (Cronbach's Alpha). Researchers had also checked the content validity of the self-developed five-point attitude scale by taking experts' views.

Analysis and Interpretation
The investigators had collected perceptions of 312 college teachers of 'Government-Aided General Degree Colleges' of West Bengal towards online learning at under-graduate level by using self-developed five-point attitude scale.

Table-1: Perceptions of college teachers towards comparison of online learning with traditional learning

Items	Strongly Disagree		Disagree		Undecided		Agree		Strongly Agree	
	F	%	F	%	F	%	F	%	F	%
Online classes can be conducted easily in comparison to traditional classes.	37	11.86	73	23.40	21	6.73	124	39.74	57	18.27
Courses can be completed faster through online teaching-learning process than chalk and talk teaching-learning process.	26	8.33	55	17.63	20	6.41	163	52.24	48	15.39
Students' attendance was more in online classroom than traditional classroom setting.	22	7.05	27	8.65	13	4.17	155	49.68	95	30.45

Table-1 highlights about the perceptions of college teachers towards comparison of online learning with traditional learning. 39.74% college teachers agreed and 18.27% college teachers strongly agreed that online classes can be conducted easily in comparison to traditional classes. 52.24% college teachers agreed and 15.39% college teachers strongly agreed that courses can be completed faster through online teaching-learning process than chalk and talk teaching-learning process. 49.68% college teachers agreed and 30.45% college teachers strongly agreed that students' attendance was more in online classroom than traditional classroom setting.

Table-2: Perceptions of college teachers towards involvement of students during online learning

Items	Strongly Disagree		Disagree		Undecided		Agree		Strongly Agree	
	F	%	F	%	F	%	F	%	F	%
Students did fewer disturbances during online classes.	64	20.51	119	38.14	35	11.22	49	15.71	45	14.42
Students were intentionally uninvolved during online learning activities.	19	6.09	38	12.18	32	10.26	145	46.47	78	25.00

Table-2 depicts about the perceptions of college teachers towards involvement of students during online learning. 38.14% college teachers disagreed and 20.51% college teachers strongly disagreed that students did fewer disturbances during online classes. 46.47% college teachers agreed and 25.00% college teachers strongly agreed that Students were intentionally uninvolved during online learning activities.

Table-3: Perceptions of college teachers towards online classroom process

Items	Strongly Disagree		Disagree		Undecided		Agree		Strongly Agree	
	F	%	F	%	F	%	F	%	F	%
Online classroom process was less effective as majority of the learners engaged as passive listeners.	31	9.94	52	16.67	23	7.37	139	44.55	67	21.47
Online classes can be conducted at anytime and anyplace.	06	1.92	12	3.85	17	5.45	176	56.41	101	32.37
Online education can be effective only for high intelligent students.	95	30.45	87	27.88	27	8.65	49	15.71	54	17.31

Table-3 describes about the perceptions of college teachers towards online classroom process. 44.55% college teachers agreed and 21.47% college teachers strongly agreed that online classroom process was less effective as majority of the learners engaged as passive listeners. 56.41% college teachers agreed and 32.37% college teachers strongly agreed that online classes can be conducted at anytime and anyplace. 27.88% college teachers disagreed and 30.45% college teachers strongly disagreed that online education can be effective only for high intelligent students.

Table-4: Perceptions of college teachers towards online assessment

Items	Strongly Disagree		Disagree		Undecided		Agree		Strongly Agree	
	F	%	F	%	F	%	F	%	F	%
Online assessment can be conducted easily.	39	12.50	43	13.78	37	11.86	108	34.62	85	27.24
Students didn't use any cheating method during online assessment.	143	45.83	69	22.12	43	13.78	41	13.14	16	5.13
Students were unaware about the online home assignment.	78	25.00	87	27.88	29	9.29	67	21.48	51	16.35
Learning outcomes can be measured accurately through online assessment.	167	53.53	42	13.46	39	12.50	37	11.86	27	8.65

Table-4 represents about the perceptions of college teachers towards online assessment. 34.62% college teachers agreed and 27.24% college teachers strongly agreed that online assessment can be conducted easily. 22.12% college teachers disagreed and 45.83% college teachers strongly disagreed that students didn't use any cheating method during online assessment. 27.88% college teachers disagreed and 25.00% college teachers strongly disagreed that students were unaware about the online home assignment. 13.46% college teachers disagreed and 53.53% college teachers strongly disagreed that learning outcomes can be measured accurately through online assessment.

Table-5: Perceptions of college teachers towards technical issues of online learning

Items	Strongly Disagree		Disagree		Undecided		Agree		Strongly Agree	
	F	%	F	%	F	%	F	%	F	%
Sometimes online classes could not be able to conduct due to network problems.	07	2.24	11	3.53	17	5.45	81	25.96	196	62.82
Online classes can be conducted with average technological knowledge.	13	4.17	22	7.05	11	3.53	187	59.93	79	25.32
Online education can be made more attractive through high technological skills.	31	9.94	26	8.33	15	4.81	174	55.77	66	21.15

Table-5 indicates about the perceptions of college teachers towards technical issues of online learning. 25.96% college teachers agreed and 62.82% college teachers strongly agreed that sometimes online classes could not be able to conduct due to network problems. 59.93% college teachers agreed and 25.32% college teachers strongly agreed that online classes can be conducted with average technological knowledge. 55.77% college teachers agreed and 21.15% college teachers strongly agreed that online education can be made more attractive through high technological skills.

Findings of the Study
▪ 39.74% college teachers agreed and 18.27% college teachers strongly agreed that online classes can be conducted easily in comparison to traditional classes.
▪ 52.24% college teachers agreed and 15.39% college teachers strongly agreed that courses can be completed faster through online teaching-learning process than chalk and talk teaching-learning process.
▪ 49.68% college teachers agreed and 30.45% college teachers strongly agreed that students' attendance was more in online classroom than traditional classroom setting.
▪ 38.14% college teachers disagreed and 20.51% college teachers strongly disagreed that students did fewer disturbances during online classes.
▪ 46.47% college teachers agreed and 25.00% college teachers strongly agreed that Students were intentionally uninvolved during online learning activities.
▪ 44.55% college teachers agreed and 21.47% college teachers strongly agreed that online classroom process was less effective as majority of the learners engaged as passive listeners.
▪ 56.41% college teachers agreed and 32.37% college teachers strongly agreed that online classes can be conducted at anytime and anyplace.
▪ 27.88% college teachers disagreed and 30.45% college teachers strongly disagreed that online education can be effective only for high intelligent students.
▪ 34.62% college teachers agreed and 27.24% college teachers strongly agreed that online assessment can be conducted easily.
▪ 22.12% college teachers disagreed and 45.83% college teachers strongly disagreed that students didn't use any cheating method during online assessment.
▪ 27.88% college teachers disagreed and 25.00% college teachers strongly disagreed that students were unaware about the online home assignment.
▪ 13.46% college teachers disagreed and 53.53% college teachers strongly disagreed that learning outcomes can be measured accurately through online assessment.
▪ 25.96% college teachers agreed and 62.82% college teachers strongly agreed that sometimes online classes could not be able to conduct due to network problems.

▪   59.93% college teachers agreed and 25.32% college teachers strongly agreed that online classes can be conducted with average technological knowledge.
▪   55.77% college teachers agreed and 21.15% college teachers strongly agreed that online education can be made more attractive through high technological skills.

Educational Implications

The educational implications of the study on the perceptions of college teachers towards online learning at the undergraduate level are as follows:

1. Ease of Conducting Online Classes: The majority of college teachers agreed that online classes can be conducted easily compared to traditional classes. This implies that institutions can invest in online learning platforms and provide necessary training and support to teachers to enhance their proficiency in conducting online classes.

2. Efficiency in Course Completion: A significant percentage of college teachers agreed that courses can be completed faster through online teaching-learning processes. This suggests that online education can offer a more streamlined and efficient learning experience, allowing students to progress through their courses at a faster pace.

3. Increased Student Attendance: Many college teachers agreed that students' attendance was higher in online classrooms compared to traditional classrooms. This highlights the potential of online learning to improve student engagement and participation, potentially leading to better learning outcomes.

4. Challenges in Student Behaviour: A considerable percentage of college teachers agreed that students may exhibit intentional disengagement and be more prone to disturbances during online classes. This emphasizes the need for effective strategies to promote active student participation and manage disruptive behaviours in the online learning environment.

5. Effectiveness of Online Learning: Some college teachers agreed that the online classroom process may be less effective, with learners being more passive listeners. This suggests the importance of incorporating interactive and engaging instructional strategies in online teaching to enhance learner participation and involvement.

6. Flexibility of Online Classes: A significant majority of college teachers agreed that online classes can be conducted at any time and any place. This highlights the flexibility offered by online education, allowing students to access learning materials and participate in classes according to their convenience, which can be beneficial for students with diverse schedules or geographical locations.

7. Inclusivity in Online Education: Several college teachers disagreed with the notion that online education is only effective for highly intelligent students. This indicates that online learning has the potential to cater to a wide range of students, including those with different learning abilities, backgrounds, and aptitudes.

8. Online Assessment: A notable percentage of college teachers agreed that online assessment can be conducted easily. This suggests the feasibility of utilizing online assessment methods, which can provide timely feedback and facilitate efficient evaluation processes.

9. Challenges with Online Assessment Integrity: A considerable percentage of college teachers strongly disagreed with the notion that students do not use cheating methods during online assessments. This highlights the importance of implementing robust assessment security measures and designing assessments that promote academic integrity in the online learning environment.

10. Technical Challenges: A significant percentage of college teachers strongly agreed that online classes can be disrupted due to network problems. This indicates the need for institutions to ensure a reliable technological infrastructure and provide technical support to address any issues that may arise during online classes.

11. Technological Skills: Many college teachers agreed that online education can be made more attractive through high technological skills. This emphasizes the importance of equipping both teachers and students with adequate technological literacy and skills to maximize the benefits of online learning.

These educational implications can inform institutions, policymakers, and educators in designing and implementing effective online learning strategies, addressing challenges, and optimizing the online learning experience for both teachers and students.

Conclusion

This study aimed to investigate the perceptions of college teachers towards online learning at the undergraduate level, providing valuable insights into the opportunities, challenges, and potential benefits associated with this mode of education. The results indicate that a considerable number of college teachers agreed or strongly agreed that online classes can be conducted with ease compared to traditional classes. This finding suggests that online education offers convenience and flexibility for both teachers and students, allowing for a smoother teaching and learning experience. Moreover, a majority of college teachers expressed agreement with the idea that online courses can be completed at a faster pace, highlighting the potential efficiency and accelerated progress enabled by online education. Another notable concern raised by the college teachers pertained to online assessment. Many participants expressed doubts about the ease of conducting online assessments and the ability to accurately measure learning outcomes through online assessment methods. These findings underscore the importance of addressing technical issues and ensuring the integrity of online assessments to maintain the credibility and validity of the evaluation process. Overall, the outcomes of this investigation enhance the pre-existing pool of information regarding online learning and offer significant perspectives for academic establishments. They can inform the development of targeted interventions, pedagogical approaches, and professional development programmes that enhance the quality of online learning experiences. By addressing the identified concerns and leveraging the opportunities identified in this study, institutions can optimize student learning outcomes and create a supportive and conducive online learning environment. It is important to acknowledge that this study focused on the perceptions of college teachers in 'Government-Aided General Degree Colleges' of West Bengal. Therefore, further research could explore the perceptions of college teachers from diverse backgrounds and disciplines to achieve more inclusive understanding of the challenges and opportunities specific to online learning at the undergraduate level. Finally, the present study sheds light on the dynamic nature of online education within the context of higher education and the significance of understanding college teachers' perspectives. By addressing the identified concerns and leveraging the opportunities, educational institutions can effectively implement and enhance online learning practices to meet the needs of both teachers and students in the digital age.

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SMARTPHONE ADDICTION AMONG UNIVERSITY STUDENTS: DIFFERENCE IN GENDER AND ACADEMIC STREAMS

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ABSTRACT
The emergence of advancement technology has enabled the students to access the vast knowledge and information easily and quickly. In the case of university students, without spending on educational activities they have spent much time on social media, online games, watching videos, shopping etch via smartphone. The excessive amount of time spent on smartphones may lead to addictive behaviour. The aim of this study was to investigate the rate prevalence of smartphone addiction and difference in gender and academic streams in relation to smartphone addiction. The investigator has used descriptive survey method to conduct this study. One hundred ten (110) participants were selected by using stratified random sampling. Smartphone addiction scale developed by Dr. Vijayshree and Dr. Masaud Ansari in 2020 was used for data collection. The prevalence of smartphone addiction among university students shows that more than 40% of students are reported above average level of smartphone addiction among which only 11% students are highly addicted. Though gender was not a significant predictor (β- 1.620, R^2- 0.003, F- 0.278, P>0.05) but academic streams were significant predictors of smartphone addiction (R^2- 0.185, F-11.972, P<0.01). The result of the t-test shows that there is no significant difference between male and female students in smartphone addiction (t-0.527, P>0.05) and F test shown that there is significant difference among the different streams of students in smartphone addiction (F-011.972, P<0.01). Similarly, the result of two-way ANOVA shows that there is a significant interaction effect of gender and academic streams on smartphone addiction (F- 4.940, P<0.01).

Introduction
The 21st century has brought revolutionary change in the field of science and technology. The use of advanced technology such as smartphones, computers, and the internet has enabled the individuals to easily connect, communicate, and collaborate with others. Similarly, students can easily access the vast amount of knowledge and information with the help of pocket-sized devices (Smartphones). This device provides an opportunity to make collaborative work, stay updated with new course materials, communicate with peers, access the online educational resources and academic platforms for their academic and non-academic activities (Anshari et al., 2017). However, along with the number of positive outcomes by using of smartphone, the excessive and uncontrolled use of this device may lead to addictive behaviour among the students.

Smartphone addiction refers to a situation where an individual cannot be able to control his urge or excessively use their phone which may adversely affect their daily life activities (Ching et al., 2015). They have spent significant amount of time on smartphone for various purposes like chatting, calling, streaming, scrolling, and communicating etc. On the other hand, they constantly check their phone due to the fear of missing call, messages, notifications, and updates. This uncontrolled use of smartphones may affect their mental health in the form of increasing stress and anxiety (Rozgonjuk et al., 2019). It has been found that the excessive use of smartphones can significantly affect the physical, mental, and social well-being of the individuals (David et al., 2018). Some other terms such as 'excessive use of smartphones' (Sut et al., 2016), 'addiction proneness' (Kim et al., 2014), 'smartphone overuse', and 'problematic mobile phone use' (Ding & Li, 2017) have been used to denote smartphone addiction.

University students are more likely to be smartphone addicted as compared to the other students. University students get maximum freedom or autonomy from the restriction of their parents in relation to making their own decisions or choices as well as decide where they spend time and how they engage with technology. This phenomenon can be explained by self-determination theory. This theory explains the individual's needs for autonomy, competence, and freedom. This theory states that how an individual chooses their personal values and interests when he will get freedom or autonomy. In this regard, university students perceive their freedom as an opportunity to use smartphones excessively or compulsively. Moreover, university students have experienced unique academic challenges, career pressure, social and professional commitments which can be directly related

with the increase of stress and anxiety among themselves (Crocker & Luhtanen, 2003).   In this situation, they have engaged in social media, online video games, and other online activities to get relaxation from these pressures or stressors (Desai et al., 2021). But excessive or compulsive use of smartphones may further lead to smartphone addiction.

Background Of The Study

The use of smartphones becomes an integral part of every individual. Similarly, it is nearly impossible to see a college going student without a smartphone. Smartphones provide multiple platforms for communication and information sharing via chatting apps and social media. Appropriate utilisation of smartphones may give the positive results whereas uncontrolled use of this may negatively affect the psycho-social life of the students.

Smartphone use has been significantly increased among university students throughout the world. A survey conducted by Deloitte Global Mobile Consumer on 51000 samples from 32 countries (age 18-24) and found that 93% participants have smartphone ownership and spent significant amounts of time on smartphone (as cited by Alotaibi et al., 2022). It has been also reported that 21.8% Nepali students (Kriti Thapa et al., 2020), 29.8% Chinese students (Mei et al., 2018), 36.7% Iranian students (Tavakolizadeh et al., 2014), and 45.7% Bangladeshi students (Ghosh et al., 2022) have experienced smartphone addiction. In India, Davey & Davey (2014) found that the prevalence rate of smartphone addiction is ranges from 39% to 44%. They use smartphones for the purpose of web browsing, streaming videos, and checking notifications in social media (Buctot et al., 2020).

Along with the high prevalence rate of smartphone addiction, it has been found that student's personal attributes have significant role in becoming smartphone addictions. Student's own interest to adopt new technologies (Olson et al., 2011), use interactive applications such as Facebook, Instagram, WhatsApp, YouTube etc may increase the smartphone dependency (Ghosh et al., 2022). Some studies have found that boys are more addicted to smartphones as compared to females (Daei et al., 2019). Some other studies show that female students are more addicted to smartphones as compared to male students (Domple et al., 2017; Sanchez-Martinezto et al., 2009). Additionally, some other studies show that there is no significant difference between male and female students in relation to their smartphone dependence (Choliz et al., 2016; Ghosh et al., 2022). Though female students use smartphones for the purpose of social interaction and shopping, but male students use smartphone for the purpose of gaming, watching adult videos, and communication (Choliz et al., 2016).

It has been reported that academic performance of university students has negative relation with smartphone addiction (Lepp et al., 2014; Giunchiglia et al.,2018). Excessive use of smartphone can increase the level of mental health problems such as stress, anxiety, and depression (Samaha et al., 2016; Wan Ismail et al., 2020), Nomophobia (Sar et al., 2012), and reduce personal well-being & life-satisfaction (Volkmer et al., 2019). Studies have found that smartphone addicted students have faced problem in physical activity, body pain, and sleep pattern (Lepp et al., 2013; Kim et al., 2015; Shah & Seth, 208; Matar Boumosleh &Jaalouk, 207; Demrici et al., 2015). It has also affected the peer and family relationship of the students (Chui, 2015).

Need And Significance Of The Study

The aim of this study is to examine the smartphone addiction among the university students in relation to their gender and academic streams. Though the use of smartphones has made the difficult work easy, enabling the students to access vast amounts of information, but its excessive use can lead to serious consequences. Smartphone addiction can reduce the attention power, critical thinking and increase the distraction which may result in low academic performance. So, it is necessary to conduct a study on smartphone addiction among university students so that necessary interventions and strategies will be developed to promote overall educational experience and academic well-being among students.

Objectives Of The Study

1. To study the difference between male and female students in terms of smartphone addiction.
2. To study the difference among arts, science, and commerce students in terms of smartphone addiction.
3. To study the interaction effect of gender and academic streams on smartphone addiction.

Hypothesises Of The Study

$H_0 1$: There is no significant difference between male and female students in terms of smartphone addiction.
$H_0 2$: There is no significant difference among arts, science, and commerce students in terms of smartphone addiction.
$H_0 3$: There is no significant interaction effect of gender and academic streams on smartphone addiction.

Methodology

Method: This study was quantitative in nature. For this study, descriptive survey method was used.

Participants: At initial stage two undergraduate colleges were selected from the Bargarh district affiliated under Sambalpur University purposively. Next, 55 students from each college were selected from various academic streams among which 60 are male & 50 are female, 50 from arts, 30 from science, and 30 from commerce. For this purpose, stratified random sampling was used.

Tools: The investigator has used a standardised Smartphone addiction scale developed by Dr. Vijayshree and Dr. Masaud Ansari in 2020 for the purpose of data collection. This scale contains 23 items and 6 dimensions such as compulsion, forgetfulness, lack of attention, depression and anxiety, disturbed hunger or sleep, and social withdrawal.

Statistical techniques used: The collected data were analysed with the help of simple percentage, mean, standard deviation, t-test, ANOVA, and linear regression. SPSS 27 was used for this purpose.

Descriptive Analysis

Table-1 Prevalence rate of smartphone addiction

Level of Smartphone Addiction	Number of students			Percentage		
	M	F	Overall	M	F	Overall
Very high level	3	2	5	3.3%	2.2%	5.5%
High level	3	2	5	3.3%	2.2%	5.5%
Above average level	17	11	28	18.7%	12.1%	30.8%
Average level	25	15	40	27.5%	16.5%	44%
Below average level	14	13	27	15.4%	14.3%	29.7%
Low level	3	2	5	3.3%	2.2%	5.5%

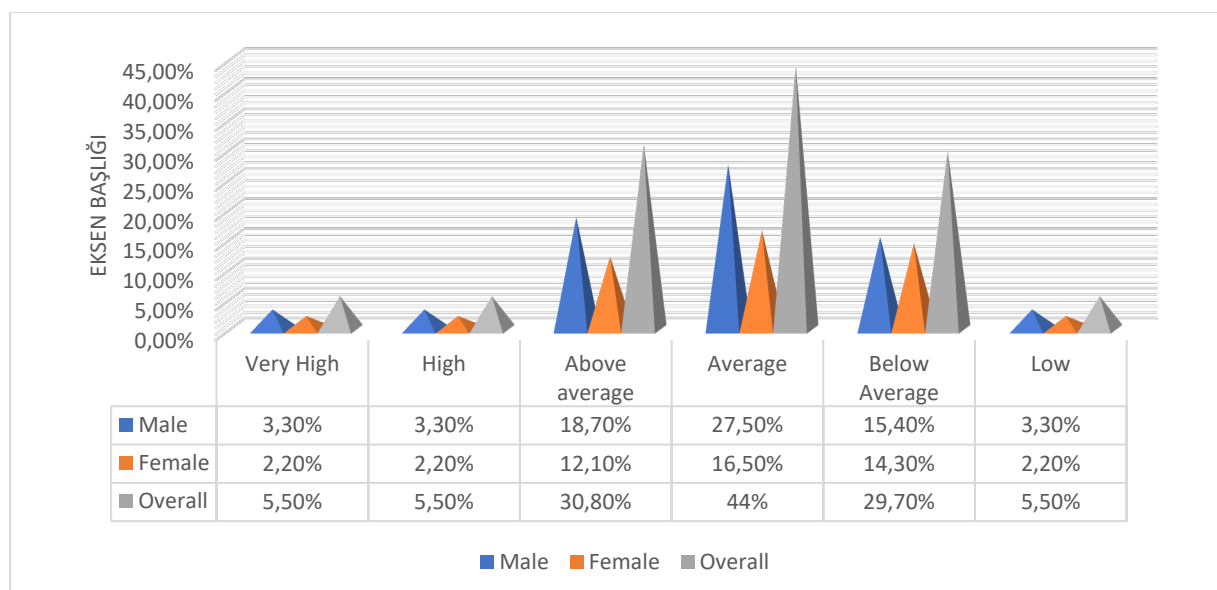|	Very High	High	Above average	Average	Below Average	Low
Male	3,30%	3,30%	18,70%	27,50%	15,40%	3,30%
Female	2,20%	2,20%	12,10%	16,50%	14,30%	2,20%
Overall	5,50%	5,50%	30,80%	44%	29,70%	5,50%

Figure-1

From the above table and figure 1 it can be said that 5.5% university students are very high level of addicted, 5.5% students are high-level addicted, 30.8% students are above average level of addicted, 44% students are

average level addicted, 29.7% students are below average of addicted, and 5.5% students are low level of smartphone addicted. For male group of students, 3.3% students are very high level of smartphone addiction, 3.3% high level of smartphone addiction, 18.70% students are above average level of addiction, 27.50% students are average level of addiction, 15.4% are below average level of addiction, and 3.3% are low level of smartphone addiction. For the female group of students, 2.2% students are very high level and high level of addiction, 12.10% students are above average level of addiction, 16.5% students are average level of addiction, 14.3% students are below average level of addiction and 2.2% are low level of smartphone addiction.

Table-2 Mean and SD of gender and academic streams

Category	Group	Mean	SD
Sex	Male	85.12	12.60
	Female	83.50	18.42
Academic streams	Arts	82.88	13.74
	Commerce	76.30	17.24
	Science	94.30	13.02

The above table shows the mean and standard deviation of both categories. The means and standard deviation for male students is 85.12 & 12.60 respectively whereas for female students is 83.50 & 18.42 respectively. Similarly, the mean and standard deviation for Arts students is 82.88 & 13.74 respectively, for Commerce students 76.30 & 17.24 respectively, and for science students 94.30 & 13.02 respectively.

Predictor Analysis
Table-3 Simple linear regression for gender and academic streams

Model	Regression weight		β	R^2	f-value	p-value	t-value	p-value
1	Sex	Male Female[(ref.)]	1.620	0.003	.278	.599	.527	.599
2	Academic streams	Arts[(ref.)]						
		Commerce	-6.580	0.185	11.972	.001	1.952	0.05
		Science	11.553				3.425	0.001

Simple linear regression was used for predictor analysis by converting the above independent variables into dummy variables. Female students were considered as reference group for the first model whereas Arts students were considered as reference group for the second model.

It has been depicted from the first model that sex was not a significant predictor of smartphone addiction as F- 0.278, P-0.599, R^2- 0.003. From the result of the second model, it can be concluded that academic streams were a significant predictor of smartphone addiction as F- 11.972 P- 0.001. Academic streams explain 18.5% variation in smartphone addiction as R^2-0.185. The beta coefficient between arts and commerce significantly explains that commerce students were predicted to have 6.58 lower scores as compared to arts students as β= -6.58, t- 1.952, P<0.05. Similarly, the beta coefficient between arts and science students significantly explains that science students were predicted to have 11.553 higher score in smartphone addiction as compared to arts students as β- 11.533, t- 3.425, P<0.01.

Difference Analysis
1. **Gender differences:**
The first objective of this study is to study the difference between male and female students in terms of smartphone addiction. In this regard, t-test was employed with the help of SPSS 27.
Table-4 t-test for gender

Groups	Category	N	t-value	df	p-value
Gender	Male	60	0.527	108	0.599
	Female	50			

It can be concluded from the above table that male and female students cannot be significantly differed in terms of smartphone addiction as t-value is 0.527 and p-value is 0.599. So, the formulated null hypothesis is not rejected.

2. **Academic streams differences:**
Another objective is to investigate the difference among the arts, commerce, and science students in smartphone addiction. In this situation ANOVA was run with the help of SPSS 27.

Table-5 ANOVA for academic streams

Source of variance	Sum of squares	df	Mean squares	F-value	p-value
Among group	5100.908	2	2550.454		
Within group	22794.947	107	213.037	11.972	0.001
Total	27898.855	109			

From the above ANOVA table, it can be concluded that Arts, Science, and Commerce students can be significantly differed in terms of smartphone addiction as f-value for the degree of freedom (2,107) is 11.972 and p-value is 0.001. So, the formulated null hypothesis is rejected at 0.01 level of significance.

Turkey method has been used by the researcher to know whether a significant difference exists among the different academic streams or not.

Table-6 Multiple comparison (post-hoc test)

(I) Stream	(J) Stream	Mean difference (I-J)	Std. Error	Sig.	95% confidence interval	
					Lower Bound	Upper Bound
Arts	Commerce	6.580	3.371	.129	-1.43	14.59
	Science	-11.553**	3.371	.002	-19.56	-3.54
Commerce	Arts	-6.580	3.371	.129	-14.59	1.43
	Science	18.133**	3.769	.001	-27.09	-9.18
Science	Arts	11.553**	3.371	.002	3.54	19.56
	Commerce	18.133**	3.769	.001	9.18	27.09

*Significant at 0.05
**Significant at 0.01

From the multiple comparison it can be said that Arts and Commerce students cannot be significantly differed as the mean difference between them is 6.580 (<0.05). On the other hand, Arts and Science students can be significantly differed as the mean difference between them is 11.553 (>0.01). Similarly, Commerce and science students can also be significantly differed in terms of smartphone addiction as the mean difference between them is 18.133 (>0.01)

3. Interaction effect of gender and academic streams on smartphone addiction:

Another objective is to study the interaction effects of gender and academic streams on smartphone addiction. In this situation, two-way ANOVA was run via SPSS 27.

Table-7 Mean and SD for gender having arts, commerce, and science streams

Gender	Academic streams	Mean	Std. deviation	N
Male	Arts	83.60	14.099	30
	Commerce	82.80	10.157	15
	Science	89.47	12.403	15
		85.12	12.605	60
Female	Arts	82.40	13.718	20
	Commerce	69.80	20.547	15
	Science	99.40	12.034	15
		8350	18.429	50
Total	Arts	82.88	13.741	50
	Commerce	76.30	17.243	30
	Science	94.43	13.027	30
		84.24	15.998	110

Table-8 Two-way ANOVA

Source	Type III sum of squares	df	Mean squares	F	Sig.
Corrected model	7125.721ᵃ	5	1425.144	7.136	.000
Intercept	735778.337	1	735778.337	3684.182	.000
Gender	52.013	1	52.013	.260	.611

Academic stream	5081.630	2	2540.815	12.722**	.000
Gender*Academic stream	1973. 007	2	986.504	4.940**	.009
Error	20770. 133	104	199.713		
Total	808430. 000	110			
Corrected total	27895. 855	109			

a. R squared = .255 (Adjusted R squared = .220)

It can be concluded from the above table that male and female students can be significantly differed having Arts, Commerce, and Science streams as the value of factorial ANOVA (2*3) is 4.940 (>0.01). So, the formulated null hypothesis is significantly rejected.

Discussion

Among the various technological advancements in 21st century, the development of smartphones is one which provides various opportunities to learn, share, and collaborate with others very easily. This pocket-sized device has both positive and negative results. It provides various platforms to the students to access the information, online educational resources, and make collaborative work with others. But its excessive or uncontrolled use can lead to serious consequences among the students such as stress, anxiety, disturbed in sleep, loss of concentration, disruption in social & family relationships etc. Overall, excessive use of smartphones can significantly affect the physical, mental, social, emotional, and academic well-being of the students.

The present study reflects that 5.5% students are very highly addicted, 5.5% students are highly addicted, 30.8% are above average, 44% are average level, 29.7% are below average level, and 5.5% are low level of smartphone addiction. More than 40% (38) students are reported to have an above average level of smartphone addiction. This prevalence was higher than previous studies (Davey & Davey, 2014; Kriti Thapa et al., 2020; Mei et al., 2018; Tavakolizadeh et al., 2014) but lower than the one study (Ghosh et al., 2022).

The simple linear regression analysis explains that gender was not a significant predictor of smartphone addiction (β-1.620, R^2- 0.003, F- 0.278, P>0.05). The linear regression also explains that academic streams were significant predictors of smartphone addiction (R^2- 0.185, F- 11.972, P<0.01). Academic streams explain 18.5% variation in smartphone addiction. The results also show that commerce students were having 6.58 lower score in smartphone addiction in as compared to arts students (β- -6.580, t-1.952, P<0.05) and science students were having 11.553 higher score as compared to arts students (β- 11.553, t-3.425, P<0.01).

Variation analysis explains that male and female students cannot be significantly differed in terms of smartphone addiction. The present result is supported by some previous studies (Choliz et al., 2016; Ghosh et al., 2022) and not supported by some studies also (Daei et al., 2019; Domple et al., 2017; Sanchez-Martinezto et al., 2009). The discrepancy between present study and earlier studies may be attributed due to sample characteristics, tools used for data collection, socio-cultural variation, and contextual influence. The participants of the present study mostly belonged to the hosteller who are stayed away from their family. Living in a hostel can promote a sense of autonomy and freedom among the students irrespective of their gender. In this situation, both male and female use their smartphone without any direct control from their parents which may be a cause of smartphone addiction.

The result of the F test shows that there is a significant difference among the arts, commerce, and science students. The mean and SD of arts students is 82.88 & 13.74 respectively, Commerce students are 76.30 & 17.24 respectively, and science students are 94.30 & 13.02 respectively. Multiple comparisons or post-hoc tests were made to know the significant difference between various academic streams via the Turkey method. The mean difference between arts and commerce students is 6.580 which is not significant at 0.05 level. The mean difference between arts and science students is 11.553 which is significant at 0.01 level. Similarly, the mean difference between commerce and science students is 18.133 which is also significant at 0.01 level.

The result of Two-Way ANOVA shows that there is a significant difference between male and female students having arts, commerce, and science academic streams. The F value for the interaction between gender and academic streams is 4.940 and P<0.01.

Conclusion

Smartphone addiction is a growing concern among university students. University students are more vulnerable to smartphone addiction because of several reasons such as individual's choice, independence from family & relatives, interest in making social relationships via social media, communication through online chat, watching

videos etc which can negatively affect their overall development. In this regard, proper rules and regulation should be made by parents, educational institutions, policy makers, and Govt. to regulate the use of smartphones.

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UNDERSTANDING SOCIO-EMOTIONAL COMPETENCE OF ADOLESCENTS IN THE LIGHT OF LOCALE AND ACADEMIC ACHIEVEMENT

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ABSTRACT
Socio-emotional competence is the capability of an individual to not only learn but also constitute and cultivate healthy and meaningful relationships. It entails effectively managing emotional reactivity and constructively engaging in social situations. Thus, socio-emotional competence is very vital for the overall development of adolescents at the secondary school stage. Hence, this study is a genuine attempt to identify the status of socio-emotional competence among teenagers with regard to locale. Goals of this investigation were to study the levels of socio-emotional competence, to find out the differences in five domains of socio-emotional competence between rural and urban adolescents, and to ascertain the association between socio-emotional competence and academic outcomes among them. In this study, the descriptive survey method was used, and a sample of 400 adolescents from 10 secondary schools (five government and five private schools) in Anantnag district of Jammu and Kashmir Union Territory was selected by stratified random sampling. The study's findings claimed that teenagers had varying levels (i.e., high, average, and low) of socio-emotional competence. Overall, rural and urban adolescents had similar socio-emotional competence, and urban adolescents were superior in self-management skills than rural *adolescents*. Academic achievement and socio-emotional competence were positively correlated with each other, and high socio-emotional competence leads to high academic achievement. As a result, the findings of the study have significance for educators, parents, social reformers, administrators, and guidance counselors in terms of creating a positive environment at home and at school, as well as instilling moral education so that socio-emotional competence can be developed. The school activities are to be reframed or revised in light of the National Education Policy 2020 by including all academic activities that shall improve the socio-emotional competence of students at the secondary school level.
Keywords: Socio-Emotional Competence, Adolescence, Locality, Academic Achievement

Introduction
Adolescence is the most vital and crucial stage of human life that takes a person from childhood to adulthood. This stage has been denoted as the stage of stress and storm," which includes the confusion of roles in society and the urge for identity and existence in this world. As Sharma and Goswami (2014) indicated, "The social self, one's identity, and one's comprehension of the self in connection to the social world all evolve and become more solidified during a person's adolescence. Adolescence is a phase of development". The unexpected modifications in the bodies of children and their intellectual operations drive them to ask questions like, "Who am I exactly?" What do I have to become? What am I expected to do, and how am I supposed to act? Thus, educators, mothers, and fathers should give special attention and support the young one in all aspects of that crucial stage to make them socially and morally responsible. Stakeholders should support them in deciding their aim in life and choosing their path, which can help them in their educational, professional, and skill development.

Adolescents with secure and insecure attachment styles differ greatly in terms of social competence. Adolescents using secure attachments are more socially competent than those with insecure attachment styles. The reason behind this is that a secure attachment style is associated with better social skills, emotional regulation, and other problem-solving abilities (Kumar and Raj, 2016). Socio-emotional competence is essential to being successful in life. High school students require a high level of socio-emotional skills for success in competitive employment. There are some creative ways in which teachers integrate these five components of SEL into their curriculum and classroom practice (Beland, 2007). Parental neglect did not impact emotional, social, or educational adjustment between the students who perceived themselves to be highly neglected by their mothers and those who did not. Parental neglect did not impact these areas of adjustment, but it may impact other areas of students' lives (Dash & Patra, 2014). Parental involvement with academic stress among senior

secondary schools has a significant positive relationship, but emotional competency with academic stress among senior secondary students has a negative relationship (Sunita, 2016). The students who had acquired good socio-emotional learning competencies had long-term positive outcomes and also had a greater likelihood of graduating from the college from which they were graduating, the capability of more positive work, and were competent in family relationships (Jones et al., 2017). As socio-emotional competence impacts almost every field of life, it is not mandatory that the social and emotional competences of adolescents are always correlated with each other. Sometimes these two competencies become altogether different and work independently. (Kaberi, 2019). Social and emotional skills are correlated to communication skills, and due to this, students become able to make connections with other people in and outside the school. Students with socio-emotional skills are better able to understand and regulate the emotions of others (Alzahrani et al., 2019). The effectiveness of teaching depends on the socio-emotional competence of teachers. Further, female teachers are socio-emotionally more competent than male teachers. The study also reveals no difference in social and emotional competence between rural and urban areas (Nonglait, 2019).

Socio-emotional skills are the combination of several essential elements like knowledge, attitudes, etc. that help adolescents identify and keep control over their emotions and related behaviors. As it is related to social aspects, it also helps in the establishment of positive relations with society by taking spontaneous decisions, setting goals, and accomplishing them. Socio-emotional skills are also contributing to the promotion and enhancement of 21st-century skills. Students with low socio-emotional skills tend to have academic, social, and emotional problems, such as trouble making friends, using drugs, and acting violently (Lopes et al., 2011). Students who are high in socio-emotional competence are able to manage emotions and have good academic performance (Durlak et al., 2011; Hagood, 2015; Jones, Crowley, and Greenberg, 2017). There is a link between socio-emotional competence and good social relationships, such as friendships, peer acceptance, and less bullying (Ladd et al., 2011). Socio-emotional skills are linked to an academic career and life success, so they should be fostered in youth and given priority in both in-school and after-school settings. These skills consist of conversation, previewing, listening, checking one's perception of others, exceptional cultures and groups, knowledge of social cues, empathy, greetings, keeping control over emotions, rules and discipline, respect for others and their views, self-monitoring, self-esteem, self-determination, creativity, self-awareness, communication process, interpersonal competence, and dealing with feelings (Kurian and Prakasha, 2016). The growth of social and emotional skills gives students the strength to face and overcome challenges. This makes them more resilient and helps them deal with stress better (Bradshaw, Mitchell, and Leaf, 2010). Lastly, one's socio-emotional competence is widely regarded as a significant factor in being able to accurately forecast one's capacity to adjust to one's surroundings.

Objectives of the study
1.   To study the levels of socio-emotional competence among adolescents.
2.   To find out the locality differences in socio-emotional competence among adolescents.
3.   To examine the locality differences on five domains of socio-emotional competence, i.e., "(i) self-awareness; (ii) social awareness; (iii) self-management; (iv) relationship management; and (v) responsible decision-making."
4.   To ascertain the relationship between socio-emotional competence and academic achievement among adolescents.

Hypotheses of the study
1.   Adolescents are not different in their levels of socio-emotional competence.
2.   There will be no significant difference in socio-emotional competence among adolescents based on locale.
3.   There will be no significant difference between urban and rural adolescents on the five dimensions of socio-emotional competence, i.e.,
"Self-awareness"
"Social awareness"
"Self-management"
"Relationship management"
"Responsible decision-making"
4.   There will be no significant relationship between socio-emotional competence and academic achievement among adolescents.

Research design
This study employed the descriptive survey method to collect data from adolescents. The adolescents of district Anantnag in J&K, UT, were the population of this study. The researcher used stratified random sampling

method in this study. A total of 400 students were selected. The researcher used the socio-emotional scale (2012) by Dr. Mingming Zhoe and Dr. Jessie Ee to collect the data from students. The following statistical techniques were used:

- Percentage
- Mean
- SD
- T-value
- Pearson's coefficient of correlation

Results and discussion
1. **Levels of socio-emotional competence among adolescents**

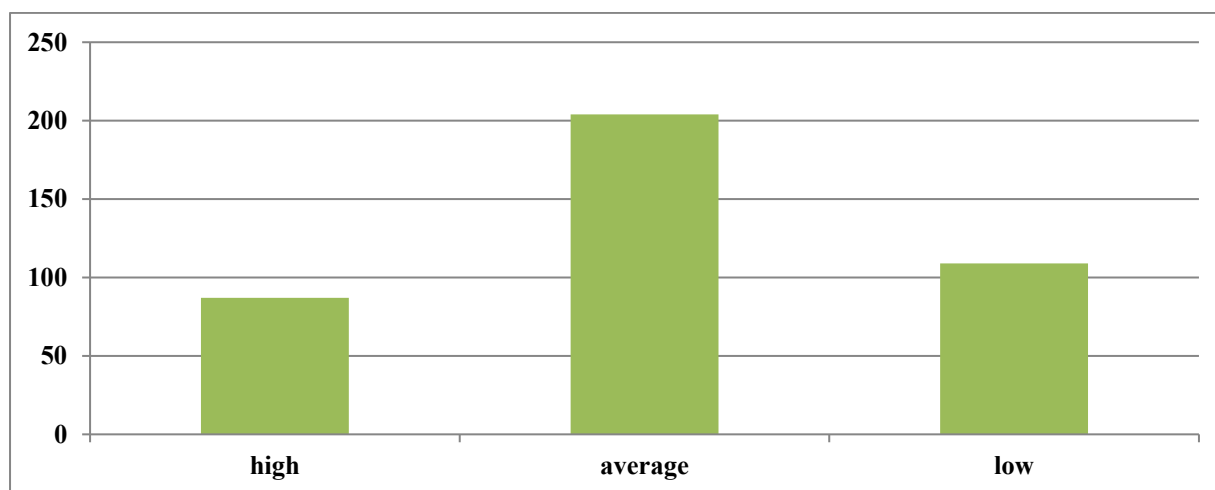| Level of Socio-emotional Competence	Total number	Percentage (%)
High	87	21.75
Average	204	51.00
Low	109	27.25
Total	400	100

Fig-1: levels of socio-emotional competence among adolescents

From the table and Figure 1, it is inferred that adolescents have various levels of socio-emotional competencies. Out of 400 adolescents, only 87 (21.75%) had a high level of socio-emotional competence, 109 (27.25%) had a low level, and 204 (51%) had an average level of socio-emotional competence.

Therefore, hypothesis No. 1, that "adolescents are not different in the levels of socio-emotional competencies", has been rejected. Hence, adolescents had various levels of socio-emotional competence.

2. Comparison of rural and urban adolescents on socio-emotional competence
This section analyzes and interprets data regarding the comparison of rural and urban adolescents on socio-emotional competence, and the same is given in the following table and figure:

Table-2: Comparison of rural and urban adolescents on socio-emotional competence

Locality	N	Mean	S.D	t-value	Level of Significance
Rural	208	98.69	4.61	0.20	Not significant
Urban	193	98.78	4.49		

Table 2 indicates that the mean scores of rural adolescents are 98.69; the standard deviation is 4.61; and the mean score of urban adolescents is 98.78; the standard deviation is 4.49 on socio-emotional competence; and the t-value is 0.20, which is lower than the table value and also not significant at any level of significance. Thus,
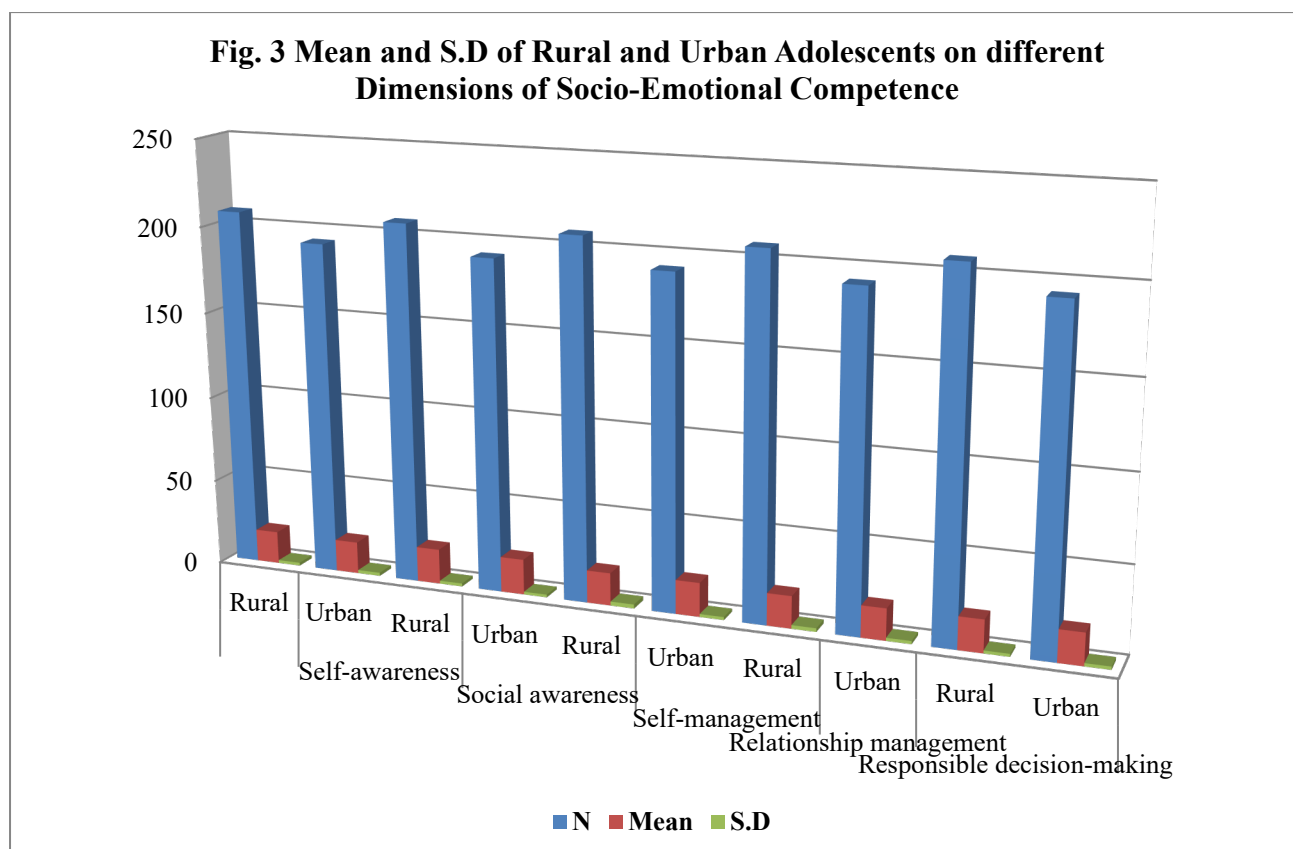
hypothesis no. 2 that "there will be no significant difference in socio-emotional competence between rural and urban adolescents" has been accepted. Hence, rural and urban adolescents have equal socio-emotional competency.

3. Comparison of rural and urban adolescents on socio-emotional competence (Dimension wise)

This part of the section deals with rural and urban adolescents on five different dimensions of "socio-emotional competence", and the same is given in the below table and figure:

Table-3: rural and urban adolescents' on different dimensions of socio-emotional competence

Dimension name	Locality	N	Mean	S.D	t-value	Level of Significance
Self-awareness	Rural	208	18.96	1.72	1.77	Not significant
	Urban	193	18.64	1.87		
Social awareness	Rural	208	20.39	1.75	1.25	Not significant
	Urban	192	20.59	1.59		
Self-management	Rural	208	18.94	2.36	4	Significant at 0.01 level
	Urban	192	19.74	1.74		
Relationship management	Rural	208	18.72	2.13	1.6	Not significant
	Urban	192	18.40	1.83		
Responsible decision-making	Rural	208	18.96	1.72	1.77	Not significant
	Urban	193	18.64	1.87		

Fig. 3 Mean and S.D of Rural and Urban Adolescents on different Dimensions of Socio-Emotional Competence

This part of the study compared the levels of "self-awareness, social awareness, self-management, relationship management, and responsible decision-making" (shown in the above table and fig. 3) between urban and rural adolescents. The results show that teenagers who live in cities and those who live in rural areas don't have very different levels of self-awareness and social awareness. But the results show that there is a difference between groups when it comes to self-management. The urban adolescents were better at self-management than the rural teens. There were no big differences between urban and rural teenagers when it came to managing relationships and making good decisions.

The findings of this part of the study are significant because they bring attention to the urgent need for programs to boost rural adolescents' capacity for self-management. The findings imply that while rural teenagers share similar levels of self- and social awareness as their urban counterparts, they may be lacking in the abilities necessary to effectively manage their emotions and behaviors. As a result, programs that help teenagers in rural areas develop techniques for self-management may be useful.

It's interesting that adolescents in urban and rural areas don't differ much from one another when it comes to handling relationships or making mature decisions. The results reveal that both groups have similar skills in these areas, suggesting that teenagers' relationship management and decision-making abilities are not significantly influenced by the social milieu in which they grow up. This finding is significant because it suggests that programs to foster healthy relationships and responsible decision-making may be successful, whether they are provided in urban or rural areas. Overall, the results emphasize the value of fostering self-management abilities among rural teenagers and suggest that interventions emphasizing positive interpersonal connections and mature decision-making may be applicable in a variety of settings.

4. The relationship between teenagers' level of socio-emotional competence and their academic accomplishments
This section presents the analysis and interpretation of data regarding the correlation between socio-emotional competence and academic achievement among adolescents. The same is given below in the table:

Table-4 Coefficient of correlation between socio-emotional competence and academic achievement among adolescents

Variables	N	r	Level of Significance
"Socio-emotional Competence and Academic Achievement"	400	0.670	0.01 level Significance

Table 4 reveals that the 'r-value' is 0.670, which is significant at the 0.01 level of significance. Hence, the hypothesis no. 4 that "there will be no significant relationship between Socio-Emotional competence and academic achievement among adolescents" is rejected. This implies that positive and strong association exists between "socio-emotional competence and academic achievement" among adolescents. This result of the study was supported by Mona Alzahrani, Monal Alharbi, and Aman Aldowani (2019).

Major findings of the study
The present study aimed to investigate the levels of Socio-Emotional competence among rural and urban adolescents. The study found the following key findings:
1. **Adolescents have different levels of Socio-Emotional competence:** Results showed wide variation in adolescents' levels of social and emotional development.
2. **On average, rural and urban adolescents have similar levels of Socio-Emotional competence:** The study claimed that, on average, no substantial difference existed in the levels of social and emotional maturity between rural and urban teenagers.
3. **Rural and urban adolescents were different only in one dimension out of five:** "self-awareness, social-awareness, relationship-management, and responsible decision-making" were recognized as the four pillars of "socio-emotional competence". Adolescents in rural and urban areas did not differ significantly on these measures of socio-emotional competence, according to the study.
4. **Academic achievement and Socio-Emotional competence were positively correlated with each other:** The study also found that academic achievement and Socio-Emotional competence were positively correlated with each other in both rural and urban settings. That is to say, teenagers who performed better in school were also more likely to be emotionally and socially well-adjusted. The results of this study were supported by Alzahrani, Alharbi, and Aldowani (2019).

Educational implications

The essentiality of socio-emotional competence in academic achievement and the role of locale cannot be overstated. Here are some educational implications of socio-emotional competence in light of locale and academic achievement:

➤ Schools in diverse communities should implement programs that promote inclusiveness, empathy, and social consciousness. This can contribute to the development of students' socio-emotional competence and facilitate their academic success.

➤ Students from low socioeconomic circumstances have limited exposure to opportunities for socio-emotional learning. In order to increase academic achievement, schools in such areas should prioritize the implementation of programs that target socio-emotional competence.

➤ Teachers should receive ample training in socio-emotional learning and be equipped with the tools and resources necessary to identify students who need additional support. This can assist in fostering healthy emotional development and improved academic outcomes.

➤ Students deficient in socio-emotional competence may struggle to manage stress, anxiety, and depression. Consequently, schools should employ trained counselors to assist students in coping with these issues.

➤ Schools can utilize online learning platforms to provide students with access to socio-emotional learning resources in light of the current pandemic. This can support their emotional health while fostering their academic development.

In conclusion, socio-emotional competence plays a crucial role in academic success, especially in diverse environments. The implementation of socio-emotional learning programs, teacher training, and counseling services can aid in the development of "socio-emotional competence" in students, resulting in improved academic performance and well-being.

Conclusion of the study

The research examined the link between socio-emotional competence and academic achievement among adolescents. Socio-emotional competence was found to facilitate positive behavioral change, which is required to increase social cohesion and respect for human rights, peace, and cultural diversity. While there is variation in the levels of Socio-Emotional competence among adolescents, the study demonstrates that rural and urban adolescents have comparable levels of Socio-Emotional competence on four dimensions. In addition, a Positive association between academic achievement and socio-emotional competence was found. Therefore, schools must put a high priority on helping students develop "social and emotional competence" by creating supportive learning environments. This may include incorporating social and emotional learning into the curriculum and putting greater emphasis on the role that instructors play in helping children build their social and emotional competence. The schools should also take into account the individual differences and location of the students during the socio-emotional learning process. The findings have significant implications for educators, policymakers, and families who seek to promote the healthy development of adolescents in diverse contexts.

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