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RESEARCH ARTICLE

STUDENT ENGAGEMENT AND ACHIEVEMENT IN ONLINE VERSUS TRADITIONAL CLASSROOM INSTRUCTION: AN ANALYSIS

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Abstract

Online teaching has been popular after the pandemic of Covid-19 situation, and it could be delivered with the help of internet-connected devices through images, text, and various kinds of videos. The traditionallearning and online teachingdefinition, along with the background of the study, isthat the short-term impact of COVID-19 has led to the design of the face-to-face challenge, and there was an intended change in the teaching and learning process. The transition of traditional learning to digital learning has faced great changes, mainly in this time of pandemic. The primary data collection process, descriptive method and deductive research approach have been followed. SPSS and ANOVA, frequency analysis, and correlation have been done.Data which have gathered from 55 different students with 13 questions, and their studywas done with the software. The interpretation of data was done with SPSS.A comparison of the literature review and the relation between the collected results are analysed. Thus, it can be concluded that the traditional learning practice created more impact onstudents' engagement. The online teaching process has made less engagement compared tothe transitional process.

Introduction:-

The traditional process of teaching involves interaction between the teachers and the students who are beingface-to-face and they are being taught knowledge about them. It has a great help to the students to teach the interpersonal skills that are helpful for them in their life later. Working with total groups with the physical settings can help to boost the overall confidence of the students, and the motivation can help them to achieve more confidence.

Online teaching has been popular after the pandemic situation, and it can be delivered with the help of images, text, and different kinds of videos. As per the views of Holbrey (2020), for evaluation, the students are asked to complete the assignments within a specific time. The interaction process with the students is limited. On the other hand, traditional learning is maintained with e affixed schedules and a fixed time and place.

Due to the Covid period, which was unpredictable for the total world, the business sector has gone through significant changes, and it has impacted the education sector also. The unprecedented shift of the big challenge helped the students to become engaged with the virtual classes (Chiu, 2021). The short-term impact of Covid has led to the design of the face-to-face challenge and there was an intended change in the teaching and learning process. It

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has beenseen as per the report that 94% of the total learners all over the world have been affected in the year 2020 due to the Covid (Ehsanifard et al. 2020). Among them, there were 1.58 billion children and youth in primary and higher education among the 200 countries all over the world.

Student engagement can be defined as the multidimensional concept that encompasses the success of leading students at the primary to secondary level of the education system. Student engagement is also characterized by the engagement and involvement of the students actively in their class to gain knowledge. Connection with the learning environment which is related to the cognitive, behavioral, and social connection with the students and gaining knowledge with the help of the traditional processes is maintained (Jusuf, Ibrahim & Suparman, 2019).

The aim of the study is to show a comparison between student engagement in the traditional way of learning and the online learning process in the education system.

The objectives of the study are-
1: To define the student engagement process in traditional learning and in the online learning process
2: To compare the traditional learning process with the online learning process and their effects on students.
3: To recognise the obstacles that students have in pursuing study in an online study as compared to a traditional one.
4: To describe the solutions those may be helpful to mitigate the issue those are faced by the students to become engaged in the online learning process

The research questions are:
Q1: What is the student's participation in the traditional and online learning processes?
Q2: What is the comparison between the impact on the student's engagement in the traditional and online process of learning?
Q3: What hurdles must students overcome to participate in the online learning process?
Q4: What are the solutions that may help to mitigate the issues in the online learning system and engage students in them?

The hypotheses of the study are:
H1: Students have been engaged more and achieved more in the online learning processes in comparison with the traditional process of learning.
H0: Students have not engaged that much and faced difficulties in achievements in the online process in comparison with the traditional process.

The main issue that has been faced in comparison with the traditional and digital learning process is the connection gap between the teachers and the students for a lack of face-to-face connection. Another issue is that the students are not learning so many things from the teacher's those that may help them in their life (Sahni, 2019). This is a great issue because, with the lack of connection physically with the teachers, the students are sometimes facing problems in their studies that are not being solved. Some of the students are not too open about their issues in the online class which was understood early by the teachers in the class only. The teacherstudents' connection is being cracked and the bind is being hampered.

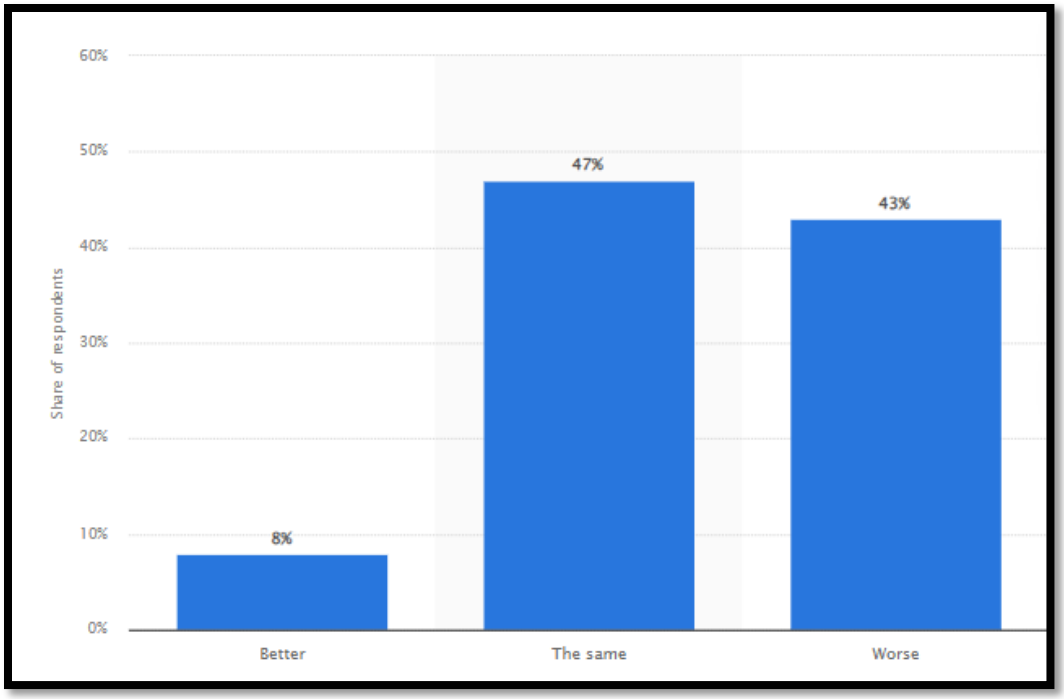

Figure 1:- Believes of students related that if online teaching is better or same or worse in compare with the traditional process
(Source: statista.com, 2023)

In the above figure, it is seen that in US, there were 43% of the people have said that online teaching was worse for their teaching (statista.com, 2023). This is a great issue now because, at the primary level, it needs to be handled with the physical attendance of the teachers. Without face-to-face connection, the situation and capacity of learning cannot be known with the help of test evaluation only (Kevser, 2021). That is a great issue now for the students in the online teaching process. This research will shed light on the challenges that are being faced in the online learning process related to student's engagement in the study. The solutions to the issues that may also be helpful for mitigating the issues will also be discussed in this present research.

Literature Review:-

Student engagement and achievement process in traditional learning

In the traditional way of teaching, they try to understand the meaning of the total context that is being taught to them and to understand why it is being studied and understood by the students. As per the statement of Serrano et al. (2019), there is also a scope for the students to give their efforts in challenging situations and to give efforts on them. The teachers can engage the students by caring about them and motivating them with the excitement of the learning process in face-to-face interaction.

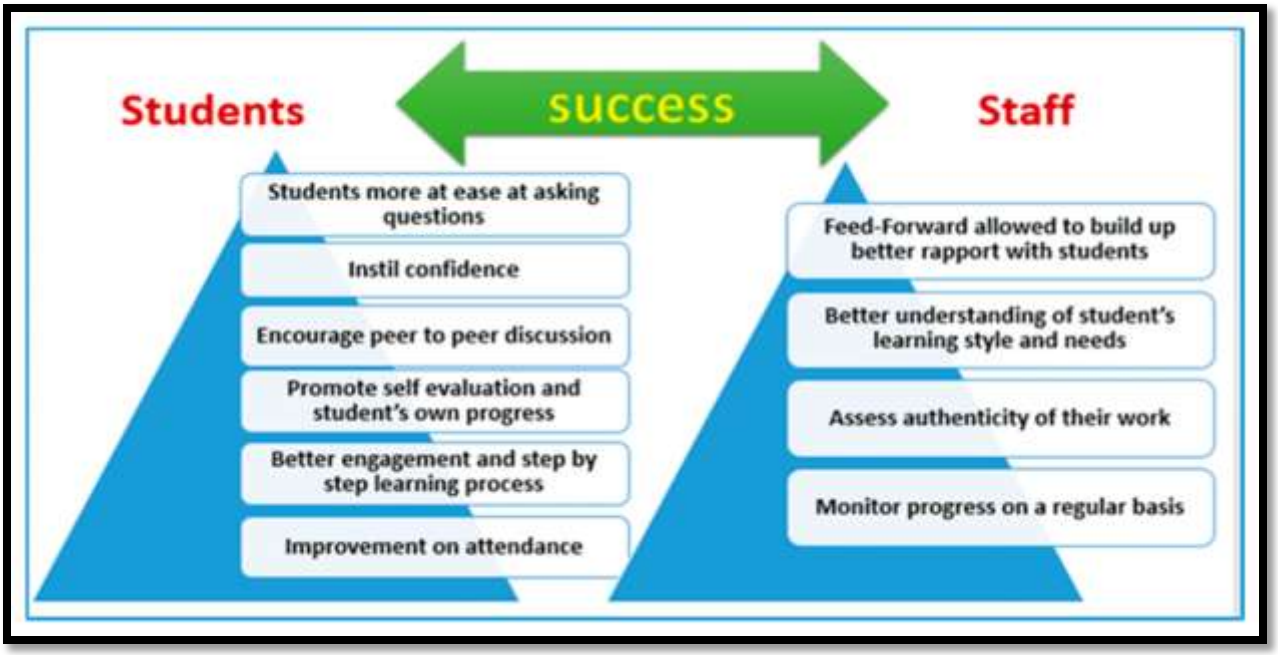

Figure 2:- Traditional process of teaching and engagement of students.
(Source:Shah et al. 2021)

It is seen that the students can ask questions to the teachers freely and there is also a great improvement in the attendance in the classroom. On the other hand, it is seen that the teachers also become helpful to know the needs of the students and can judge the authenticity of the homework of the students (Shah et al. 2021). The teachers may also monitor the progress of the students repeatedly and can guide them.

Students' engagement process in online learning

The online teaching system and lessons from them are very effective and may be proved easily understandable for the students. As per the views of Ali, Narayan & Sharma (2021), the graphics, and animation of the process of different techniques related to study may help the students individually with clear ideas. It may help us to remember more and this may help to create a great picture for the students. On the other hand, in the online learning system, there is no chance to interact with the students and teachers and their batch mates physically (Shukla et al. 2020). The bonding between the students and teacher'sstudents relation is affected by the online learning system. Fun activities through a virtual system are the only way to teach the students and to make them engage (Ergun& Adibatmaz, 2020). But the addiction of using digital systems like computers and mobiles is creating an impact on children. The students are facing loneliness as they are not getting physical contact with their classmates.

Comparison between the engagement of students in online and traditional learning processes

Traditional learning	Online learning
Face-to-face interaction exists here.	There is no chance of face-to-face interaction
Teachers can read the minds of the students and can guide them by seeing those (Nasution et al. 2021).	It is impossible for the teachers to understand the issues of the students if they do not express their issues to them.
There is a chance to discuss any issue with classmates and to find a way to solve it in a group.	As there is no chance to interact with the students in the class face to face, group work is not possible (Yulia, 2020)
If there are any behavioral issues of the students they	It is not possible to know the behaviors of the students

can be solved as per the guidance of teachers.	without being with them physically.
Traditional learning may help to improve better presence in class (Tsay et al. 2020).	Students cannot get sometimes interested to join the class in many situations at home.

Table 1:- The comparison of students' engagement and achievements in traditional and online learning process. (Source:Tsay et al. 2020)

The above table can show the differences and comparison about the points faced in different times to understand the engagement and achievements of the students in the process of online learning process and the online teaching process system.

Challenges faced in the online learning process

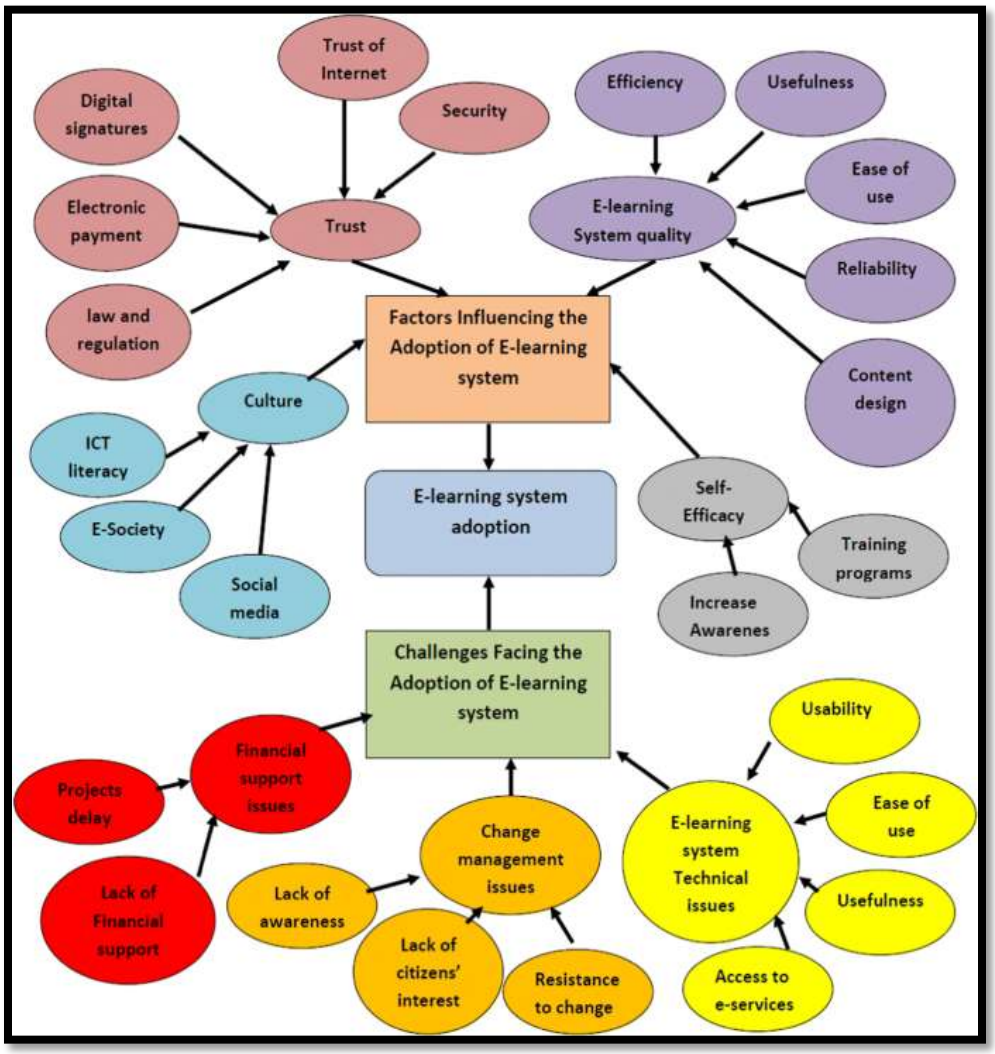

Figure 3:- Challenges of the online learning.
(Source:Toro-Troconis, Alexander & Frutos-Perez, 2019)

There are many issues that are being faced in the online learning system and to implement and service proper study to the students. The main issue faced in the online learning system is the lack of motivation of the students (Toro-Troconis, Alexander & Frutos-Perez, 2019). Students do not feel that much encouragement to go to schools to interact with their friends and to be with them in the online process of teaching. Another Issue also faced by the schools is that the infrastructure related issues give proper teaching to the students in the proper way. As per the

points of Kay & Pasarica (2019), technical issues are binge faced by the teachers and are not habituated with the new equipment used for the online studies of the studies. The main issue in online learning is the lack of interaction with the friends of schools and the teachers that are needed for learning. Structures of different schools are different, and this is hampering the way of using them in the proper way (Qureshi et al. 2013). On the other hand, the students are facing issues to become open up to their teachers and to tell them their issues. This is being the cause of hampering their learning process.

The solutions to mitigate the issues of the student's engagement in the online learning process

The teachers should use multiple formats like video engaging, learning activities in groups and the games those may create the bonding between the students virtually should be arranged by the teachers. As per the views of Lo & Hew (2020), the teachers should give attention individually to know their issues and should try to mitigate the issues. The teacher should accept the participation more adversely in the class and the performances of the students. The teachers should be trained to use the technologies approximately and to detect them easily and to help them become more engaged in the class. Interesting facts should be added to attract them in the class and this may help to enhance their engagement and performances (Cranfield et al. 2021). The teachers should take regular feedback and should analyze the behaviors and psychology of the students to guide them properly. There should be asynchronous tools that can help to detect the students in particular and attention should be given to them to make them more engaged and to achieve their knowledge (Xhelili et al. 2021).

Theoretical framework

Vygotsky's theory of students' engagement

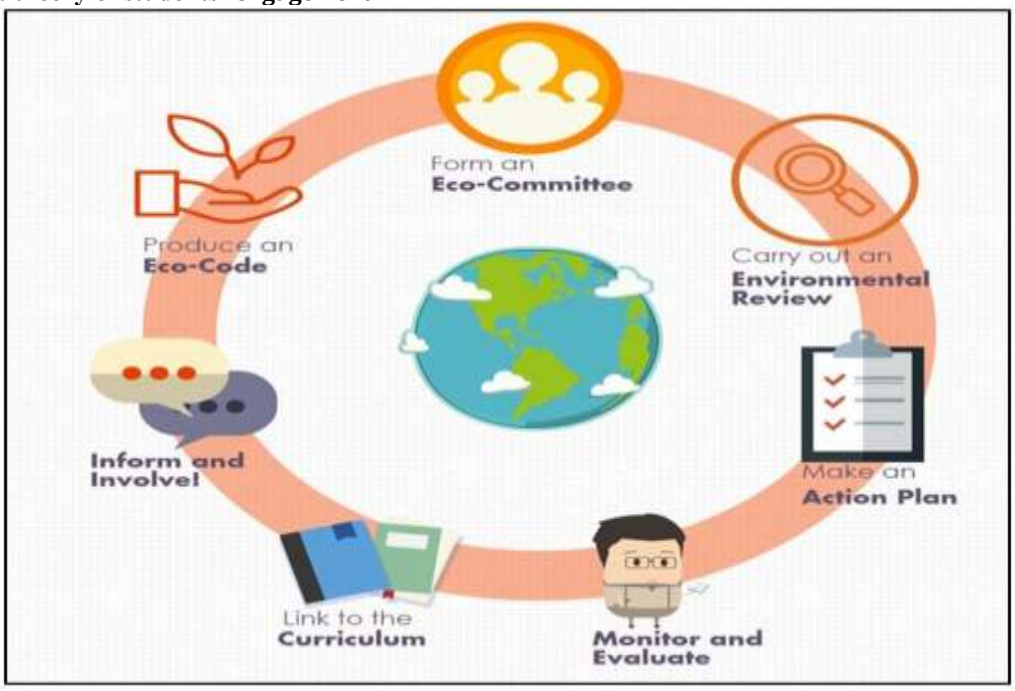

Figure 4:- Students engagement theory of Vygotsky.
(Source:Romero-Rodriguez et al. 2019)

The theory related to the engagement of the students was developed by Vygotsky in the year 1978 that has a great importance of emphasizing the roles of the students and their environment for the learning process. It was told that the encouragement process and involving the students more with the help of pedagogical practices in the learning process may help to enhance their performances in a great way (Romero-Rodriguez et al. 2019). This theory may help to build an environment for the learning process and to achieve knowledge that is needed for the students in the online learning process.

Methodology:-

In this present research, the primary quantitative research method is used in the data collection method. A descriptive research design has been used in this research to know the scientific cause of the issues that are faced and to get their solutions. A deductive approach of research has been used in this research to focus on the primary data collection process. Positivism philosophy is used to get the final conclusion with the help of the quantitative data analysis process. The questionnaire has been made with 13 questions that were asked among 55 students who are involved in online learning and were involved in the traditional process of teaching. Primary quantitative data analysis has a great help to get accurate data for the rich and to get a practical conclusion related to the topic of the research. SPSS software has been used to interpret the data that are collected with the help of primary survey methods related to the responses of the students. In SPSS, correlation frequency tests and ANOVA have also been done to get statistical data interpretation along with regression analysis. Descriptive research methods with the help of demographic analysis of the research also have been done to fulfill the whole research process (Romero-Rodriguez et al. 2019). All the ethics of the research and the privacy of the personal details of the participants were conserved in this research. There was no force on the participants and there was no manipulation to get favorable data for this research.

Finding and analysis
Demographic Analysis
Age

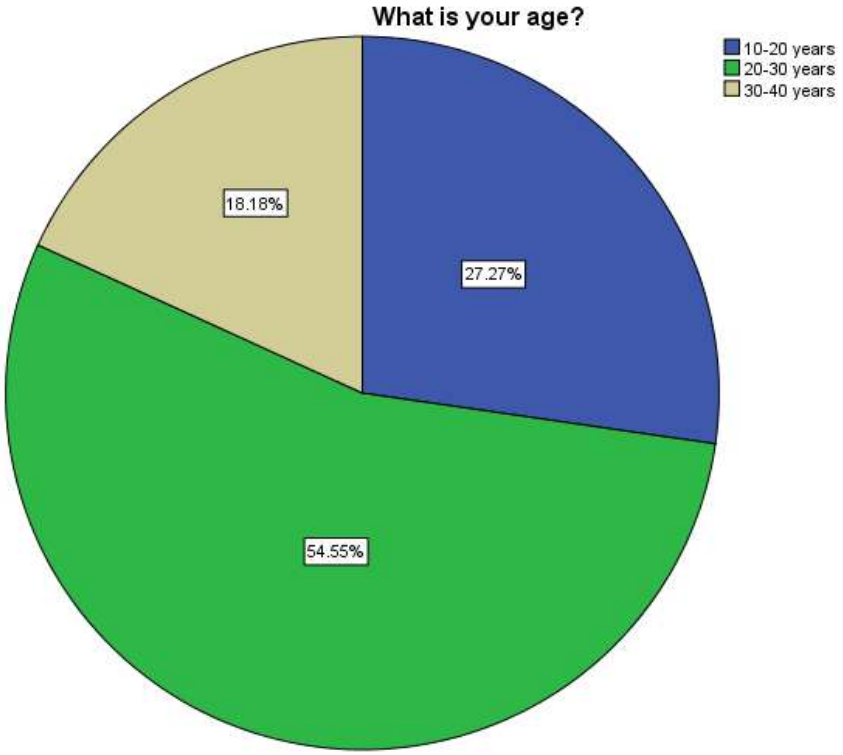

Figure 5:- Age Group of participants.
(Source: IBM SPSS).

What is your age?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10-20 years	15	27.3	27.3	27.3
	20-30 years	30	54.5	54.5	81.8
	30-40 years	10	18.2	18.2	100.0
	Total	55	100.0	100.0	

Table 1:- Age of participants.
(Source: IBM SPSS)

The above table represents the age-related data of the respondents who have taken part in the survey conducted for the research. The maximum percentage of the respondents were from the age group of 20 to 30 years. The age group of 10 to 20 years have 27.3% of the total respondents. The rest of 18.2% of the respondents were belonged from the age group of 30 to 40.

Gender

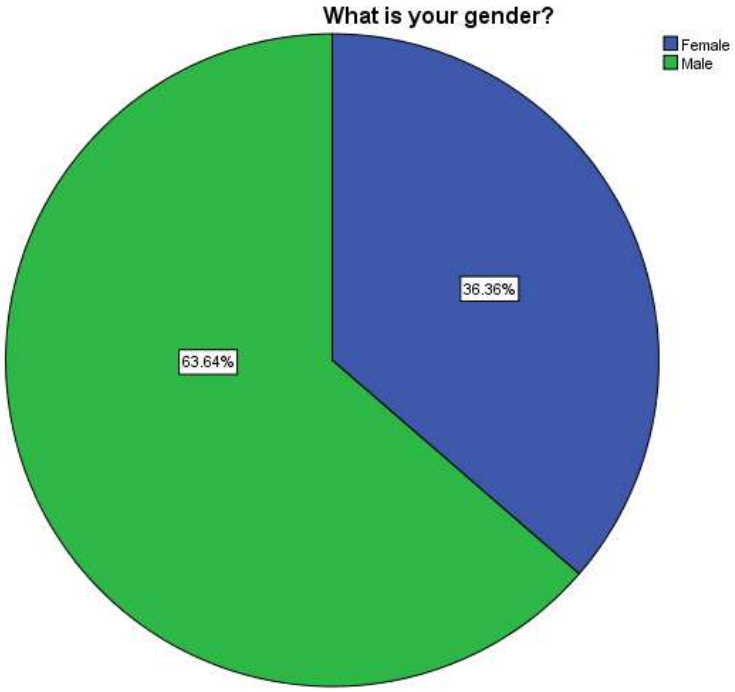

Figure 6:- Gender of participants.
(Source: IBM SPSS).

What is your gender?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	20	36.4	36.4	36.4
	Male	35	63.6	63.6	100.0
	Total	55	100.0	100.0	

Table 2:- Gender of participants.
(Source: IBM SPSS)

The table 2 represents the percentage of the respondents from different genders. Male respondents were 63.6% and female were 36.4% of the total respondents.

Educational Qualification

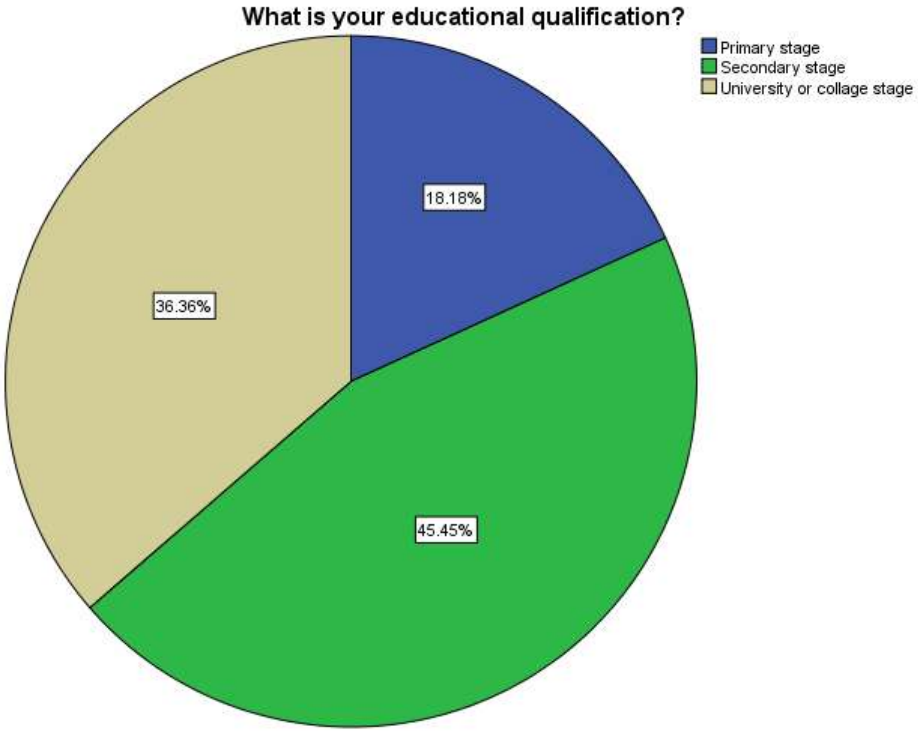

Figure 7:- Educational qualification.
(Source: IBM SPSS)

What is your educational qualification?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary stage	10	18.2	18.2	18.2
	Secondary stage	25	45.5	45.5	63.6
	University or collage stage	20	36.4	36.4	100.0
	Total	55	100.0	100.0	

Table 3:- Educational qualification.
(Source: IBM SPSS)

The educational background of the respondents is represented in the table above. The respondents' educational backgrounds are crucial since they help determine the breadth of their expertise. The highest proportion of respondents hold a secondary education qualification, accounting for 45.5% of all respondents. 36.4% of those polled had graduated from university or college. Only 18.2% of those polled were competent for the primary level of education. The majority of respondents in this study were highly educated, which improves the data quality.

Statistical analysis
Descriptive Analysis

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
DV	55	5.00	5.00	10.00	8.6364	1.44483	-1.430	.322	1.400	.634
IV1	55	9.00	6.00	15.00	13.1818	2.38895	-2.507	.322	5.354	.634
IV2	55	4.00	11.00	15.00	13.6364	1.16052	-.713	.322	.214	.634
IV3	55	3.00	12.00	15.00	14.0909	1.09329	-.627	.322	-1.185	.634
Valid N (listwise)	55									

Table 4:- Descriptive analysis of the variables.
(Source: IBM SPSS)

The above table represents the descriptive analysis of the research which includes all the variables of the research. This helps to analyze the quality of the data have been used through the kurtosis and skewness analysis.

Hypothesis 1

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.127[a]	.016	-.002	1.44663	.016	.866	1	53	.356	1.900

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.813	1	1.813	.866	.356[b]
	Residual	110.914	53	2.093		
	Total	112.727	54			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.625	1.104		6.909	.000
	IV1	.077	.082	.127	.931	.356

Table 5:- Linear regression analysis of hypothesis 1
(Source: IBM SPSS)

Table 5 has represented the regression analysis of hypothesis 1 and represents the relation of the variables through the significance value. The significance value of this hypothesis is lower than 0.5 and this demarcates the variables have good relationship.

Hypothesis 2

Model Summary[a]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.306[b]	.094	.077	1.38834	.094	5.484	1	53	.023	1.597

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.571	1	10.571	5.484	.023[b]
	Residual	102.156	53	1.927		
	Total	112.727	54			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.438	2.228		1.543	.129
	IV2	.381	.163	.306	2.342	.023

Table 6:- Regression analysis for Hypothesis 2.
(Source: IBM SPSS)

The above table represents the significance value of this regression analysis through which the relation of the hypothesis could be determined. The significance value is 0.023 which is lower than 0.5 and it represents the positive relation between the variables.

Hypothesis 3

Model Summary[a]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.139[a]	.019	.001	1.44433	.019	1.037	1	53	.313	1.954

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.164	1	2.164	1.037	.313[b]
	Residual	110.563	53	2.086		
	Total	112.727	54			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.056	2.541		2.384	.021
	IV3	.183	.180	.139	1.018	.313

Table 7:- Regression analysis for Hypothesis 3.
(Source: IBM SPSS)

The above table represents the internal relationship through the regression analysis of hypothesis 3. The significance value of this hypothesis is 0.313 which is lower than 0.5 and it is a good indicator of the relation.

Pearson Correlation Test

Correlations

		DV	IV1	IV2	IV3
DV	Pearson Correlation	1	.127	.306*	.139
	Sig. (2-tailed)		.356	.023	.313
	N	55	55	55	55
IV1	Pearson Correlation	.127	1	.759**	-.042
	Sig. (2-tailed)	.356		.000	.761
	N	55	55	55	55
IV2	Pearson Correlation	.306*	.759**	1	.172
	Sig. (2-tailed)	.023	.000		.208
	N	55	55	55	55
IV3	Pearson Correlation	.139	-.042	.172	1
	Sig. (2-tailed)	.313	.761	.208	
	N	55	55	55	55

Table 8:- Correlation test of the research.
(Source: IBM SPSS)

The above table represents the correlation values of the different variables of the research. This helps to understand the interconnection of all the variables with each other.

Discussion:-

In the literature review, it has been seen that traditional learning was helpful to connect with the students because it was easy there to interact with the students face to face. The primary level students cannot tell all the things that are faced with to learn and achieve by them (Lee, Song & Hong, 2019). Sometimes, they are not attentive in class and invest their minds in other places. That used to be understood by the teachers as they were familiar with this situation. The teachers used to guide them and used to teach them in the proper way by interacting with them (Cole, Lennon& Weber, 2021). But in the online learning process, the teacher sometimes did not even see the faces of the students.

The teachersalso do not know all the descriptions of the mind also as being connected with virtually. The students are attentive in class, and can easily connect with the class, only they can learn something and can achieve something as they can tell their issues to their teachers (Camacho& Legare,2021). In primary and secondary standards, the teachers and the parents are the main people who can guide the students and can teach lessons of life that are needed for them in the future. But in the traditional learning process, the teachers and the students, and the parents were connected simultaneously. Teachers might interact with the kids face to face, and sometimes the students' issues would be kept in their minds and conveyed to the parents to change their actions or to emphasise them. (Yulia, 2020). Students are not always attentive in class during the online learning and instruction process, and parents are unable to always reach the teacher. There is a significant communication gap between educators and learners, between parents and pupils. (Barber, 2020). This is not helpful for the students to make their habits and character. In the results also, it is seen that the students are not too attentive to their studies. Sometimes they are too involved in the digital system like phones and computers in the name of classes (Nasution et al. 2021). There are sometimes facing issues with some bad impact of the internet content being spread through groups and social media. Some issues like addiction to the internet, social media, and games are hampering the behavioral issues and cognitive issues of the students. The teachers and parents are not able to control the students (Tsay et al. 2020). The education system with online learning was invested to enhance and continue the process of study. But it is hampering great students to engage them in the study and to achieve in their future life also.

Conclusion:-

Thus, it can be concluded that the traditional learning system has had a great impact on the minds and the study of the students they want to achieve sometime in their life. The teachers and their interaction face to face can help to learn something by being in their environment. The hostel system and the systems to go to school and to learn and work in groups helped students to solve many problems in their life from their classroom age. Working experiences in groups and being with people and doing work with their help and managing them was great work that would be needed in the field of life. Face-to-face interaction with students and teachers is beneficial for absorbing various forms of knowledge that are needed in daily activities. Issues in classroom learning would be overcome with the support of other students. Also, those who understood the problems. This may help to make bonds with them and to work in a group that is needed in life. On the other hand, online learning has been useful in the pandemic period. There was no way without this choice of learning process. The students related to the virtual classes where they cannot see their friends and teacher physically. If they are faced with any issues in their study, it cannot be sometimes mitigated as they cannot tell the teachers among all the students. This was a great issue in online learning. Online learning has an advantage also and it is that any student can access the schools and courses without the boundaries of the geographical areas. The students who were wanting to access the international classes but were not able to go to the places are taking classes from home. But the teacher-students' bonds and achievements are being hampered in this online learning process in a great way.

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