Impact of Interactive Education on the Learning Outcomes and Quality Assurance

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The traditional education system is relying on the one-way transfer of information. Moreover, in past decades' students were taught only the theoretical aspects of education which is not enough at the higher education level Interactive Learning is a pedagogical approach that incorporates social networking and urban computing into course design and delivery. Interactive Learning has evolved out of the hyper-growth in the use of digital technology and virtual communication, particularly by students. The results show that the interactive system of education has a couple of advantages for students and teachers. Firstly, it promotes the use of technology in education and maintains the social and interactive environment in class. Secondly, an interactive session grabs the attention of students because of the strong relationship with the instructor.

Keywords: interactive education, quality assurance, learning outcomes

INTRODUCTION

Interactive education is the use of new technologies in education to enhance the learning process. In the past, complex education systems enhance the stress level of students and disturbs the learning process in the classrooms. Interactive education is based on two major parameters. Firstly, the teacher is an integral part of the class, and the communication of instructor and student is vital for the learning process (Mezhennaya, 2018; Magdalena Grochowalska, 2014). Secondly, Hung and Chou (2015) stated that the use of communicational tools and advanced learning technology is vital to maintaining an interactive classroom environment (Sotiriadou et al., 2020). Interactive learning means the sharing of ideas in classrooms and the use of technology such as presentations and other means of communication allows the teacher to create an interactive classroom session. Lin and Chen (2017) claimed that Interactive learning is vital in universities and colleges to develop the ability of critical thinking in students. The traditional approach of education is based on the transfer of education from teacher to students through means of lectures, figures, and other material. Moreover, this method of learning does not involve the sharing of ideas (Lamb et al., 2018). On the contrary, interactive learning encourages the students to contribute to productive classroom conversation through the means of technology. In universities, interactive education

is promoted due to a couple of major reasons. Firstly, the interactive sessions enhance the creative ability of the students because two-way conversation brings innovative ideas. Secondly, participative learning helps the instructor to maintain a positive learning environment in classrooms (Hessels et al 2015).

Baleni (2015) stated that in university interactive education is important because it provides students' knowledge of practical aspects of education. In universities practical education is vital and the interactive learning sessions and the use of technology develop a practical learning approach in the students. The researcher argues that three major outcomes of interactive education it was observed at the university level. Firstly, it provides the freedom to students to participate in the class and share ideas (Hwang and Lai, 2017; Milan Klement, & Jiří Dostál, 2013). The freedom of sharing ideas is vital to learning the practical implications of theoretical ideas. Secondly, the interactive education system develops a healthy relationship between teachers and students. Dobber et al (2017) claimed that, at a higher level of education such as universities, the relationship between student and instructor is vital to enhance learning ability. Thirdly, the interactive education system helps the students to organize mental abilities and focus on analytical reasoning rather than just relying on theoretical aspects of studies. In universities, interactive sessions bring positiveness amongst students (Hessels et al 2015). The study aims to evaluate the impact of interactive education on learning outcomes in X university. Moreover, the study aims to compare the interactive education system with the traditional system of education to compare the difference in outcomes. The study is based on predictive analysis so the model of E-learning will be discussed to predict the benefit of interactive education (Kutbiddinova, 2016).

The traditional education system is relying on the one-way transfer of information. Moreover, in past decades students were taught only the theoretical aspects of education which is not enough at the higher education level and more specifically at the university level (Sotiriadou et al., 2020). Moreover, one-way communication discourages the participation of students in the classroom which ultimately create a negative impact on the mind of students. The teacher is an integral part of the study but the participation of students is vital to maintaining a healthy classroom environment. A traditional complex system of education discourages innovative ideas and allows the student to focus on theoretical activities.

LITERATURE REVIEW

Interactive Education

Dobber et al (2017) claimed that Interactive education is a concept of developing interactive classrooms sessions because the classroom is a place where students learn new ideas. Moreover, the use of technology and tools of education is vital to maintaining a productive learning environment in the classroom (Kutbiddinova, 2016). five universities are selected to analyze the impact of interactive education on the outcomes of the classroom. In universities sharing ideas are a vital aspect of learning because it brings develop a creative mind and improves the thinking ability of students (Sotiriadou et al., 2020). The use of technology such as presentations, visual learning, and communication tools promotes two-way learning in the class (Hessels et al 2015).

Lin and Chen (2017) claimed that an extensive question answers session in the classroom is also part of interactive education. In the modern era of education, the interactive classroom environment is preferred and E-learning approaches are implemented to get the proper outcome. Teacher and instructor is the primary part of the E-learning approaches (Senthamarai, 2018). However, communication technology is used to convey the message to students. The students have the right to participate in the classroom and share their ideas. The interactive sessions are useful in a couple of ways. Firstly, it provides a flexible classroom environment to students which improve their learning ability (Kutbiddinova, 2016). Secondly, it allows the students to learn the practical implication of ideas. The E-learning environment generally promotes innovation and creative thinking. In the past decade, the techniques of learning and education and evolved drastically due to the presence of various online mediums such as E- classrooms, and Mobile learning as well.

Learning Outcomes

The online tutorials and flexible methods of learning enhance the outcomes of student students in universities. An integrated learning approach has two major benefits for educational institutions such as Universities. Sotiriadou et al., (2020) argued that in universities integrated learning approaches such as the use of technology ensure the continuous flow of learning which is difficult to manage in a traditional educational system. The collaborative learning environment allows the students of universities to participate in various practical learning activities (Hessels et al 2015). The practical means of learning such as visual presentation of field models and practical demonstration of ideas are vital to building an appropriate career for students. However, traditional methods of teaching discourage the practical demonstration of ideas because of the belief in theoretical learning. Secondly, interactive education is good for grooming and developing social circles (Lamb et al., 2018). In the universities, the outcome is not only evaluated by the level of knowledge but the grooming and practical demonstration of theoretical knowledge is the parameter of evaluating the overall performance of the students at educational institutions and more specifically in universities.

Lin and Chen (2017 claimed that, besides the advantages of an integrated education system, the implementation of E-learning has several challenges which need to be minimized by universities. Firstly, the cost of implementation is quite high because the training of students and teachers involves a high cost. Sotiriadou et al., (2020) argued that an interactive system is not beneficial if the students are not trained to adopt new technology. Secondly, the awareness o new and integrated systems of education is a challenge because the traditional staff is not willing to accept the new and integrated techniques such as the implementation of new software and tools for presentation. Moreover, students are not comfortable adopting an integrated education system because of mental fear. At last, it requires continuous upgradation because of the high involvement of media and technology in the system.

The researcher argued that interactive sessions are vital to grabbing the attention of the students at the university level. As the university is the platform where teachers and students work collaboratively and interactive modes of education are the best way to develop maintain a teacher and student relationship. The two-way communication in the classrooms by the implementation of communication technologies enhances the learning level of students and motivates the students to pay attention to new ideas. Moreover, a strong relationship with the teacher and maintain the class environment as well.

Quality Assurance of Education

Learning outcomes not only depends on the tools of delivering lecture but it depends on the quality of education that an institution delivers to the student. Lin and Chen (2017) claimed that University students are mature enough to understand the practical demonstration of education and presentation tools. Moreover, the use of software to develop the understanding through prototypes is part of interactive learning as well. Sotiriadou et al., (2020) argued that, the quality of education is based on two major parameters. Firstly, the implementation of interactive tools such as communication tools and other tools, presentation tools, multimedia recordings of interactive sections, and other techniques and software. Secondly, the training of staff is vital to deliver healthy lectures because the trained staff can easily handle the tools. The major hurdle between interactive learning and advanced education is the lack of knowledge about interactive tools of education which restricts the instructor to deliver knowledge appropriately.

RESEARCH METHOD

The research methodology is the means through which the data is collected and analyzed to generate future results. The study is descriptive so the data is collected from quantitative means of data collection. The primary data is collected from participants to generate results.

Research Population

There are a variety of data gathering instruments available, including interviews, questionnaires, and observations, but because the required research is quantitative, the questionnaire is chosen.

Technique and Sampling

The population refers to the entire group from whom the data is gathered. as it is a predictive analysis so the relationship between two variables is evaluated through regression model and correlation models as well. The population of the entire study is university students of the state from which the data is collected. The sample is the subset of the population and accurate sampling is vital to produce positive results. The sample of the desired study is 219 and all participants belong to the top 5 universities of the state.

DATA ANALYSIS AND RESULTS

In the desired study, an interactive session plays the role of the independent variable and the learning outcomes and quality of education play a role of the independent variable as well. The study is based on predictive analysis so the data is analyzed through correlation and regression models to predict the future results in comparison with the desired data.

Descriptive Statistics

Summary of Frequencies

Interactive Learning Maintains a Healthy Relationship Between Instructors and Students. More than 30% of participants are agreed with the fact that Interactive learning maintains a healthy relationship between teacher and students and 24 % strongly agrees with the fact that Interactive learning maintains a healthy relationship between teacher and students

Interactive Education Is Important for Grooming the Perspective of University Students. More than 35% of people are strongly agreed with the fact that Interactive education is important for grooming the perspective of university students. Moreover, 28 % of people are slightly agreeing with the statement. As a whole, more than 50% of participants are in favor of the statement.

Interactive Sessions Allow the Teacher to Deliver More Knowledge in Less Time. More than 50% of participants are agreed with the statement that, Interactive sessions allow the teacher to deliver more knowledge in less time. However, 14 % of the total participants are strongly disagreed with the statement that interactive sessions allow the teacher to deliver more knowledge in less time.

EI Education Encourages the Students to Participate In-Class Discussion. More than 55% of people are agreed with the statement that Interactive education encourages the students to participate in-class discussion.

Cross Tabulation

Age * Interactive Education (IE) Allows the Lecturer to Demonstrate the New Ideas. In the desired table, participants lie between the ranges of 20-35 agreed that an Interactive education (IE) allows the lecturer to demonstrate the new ideas. People above 30 also agree with the stance that an Interactive education (IE) allows the lecturer to demonstrate new ideas.

Age * EI Education Encourages the Students to Participate In-Class Discussion. People lie between the age of 20-35 are more agreed with the statement that Interactive sessions encourages the students to participate in-class discussion.

Age * Interactive Sessions Allow the Students to Learn Beyond the Theoretical Concepts. Young people whose age lies between the age range of 20-35 agreed with the statement that the Interactive education technique allows the practical demonstration of concepts. However, old age people are more likely to follow the traditional method of education rather than interactive education

Interactive education is the independent variable in the table above, and it is abbreviated as IE. Furthermore, the dependent variables are Quality Education (QE) and Learning Outcome (LO). IE and LO have a correlational value of 0.760, which is substantial enough to support a hypothesis. Furthermore, IE and QE have a correlational value of 0516. Which is the most important factor in proving the findings' authenticity? Any variable has a one-to-one association with itself.

Reliability Analysis

Cronbach Alpha is used to describe the consistency of the outcomes in reliability analysis. The validity of replies is demonstrated by the crucial value of the desired factual consequence. Cronbach Alpha has a massive value of 0.7, and any number over that is adequate to give results. In any scenario, the value should be less than 1.

Cronbach's Alpha has an usual value of.89, which is much higher than 0.7 in a perfect review. It suggests that members' emotions are genuine. Contrary to popular belief, if the value is less than 0.7, the results are not considered relevant. The test size and inspection approach have a significant impact on the reliability score.

Regression Analysis

Regression analysis evaluates the association between two variables. In the desired study the adjusted R square values of model 1 is .760 and model 2 is .516 which shows the significance of results.

The optimal model of regression worth of R-Square depicts that the dependent and free factors are inextricably linked. R-square quality should be more than 0.5, and the optimal value is 0.516, indicating that components are the greatest match to the relapse line's results. In reality, if the value is less than 0.5, it means that an increase in one variable results in a decrease in another.

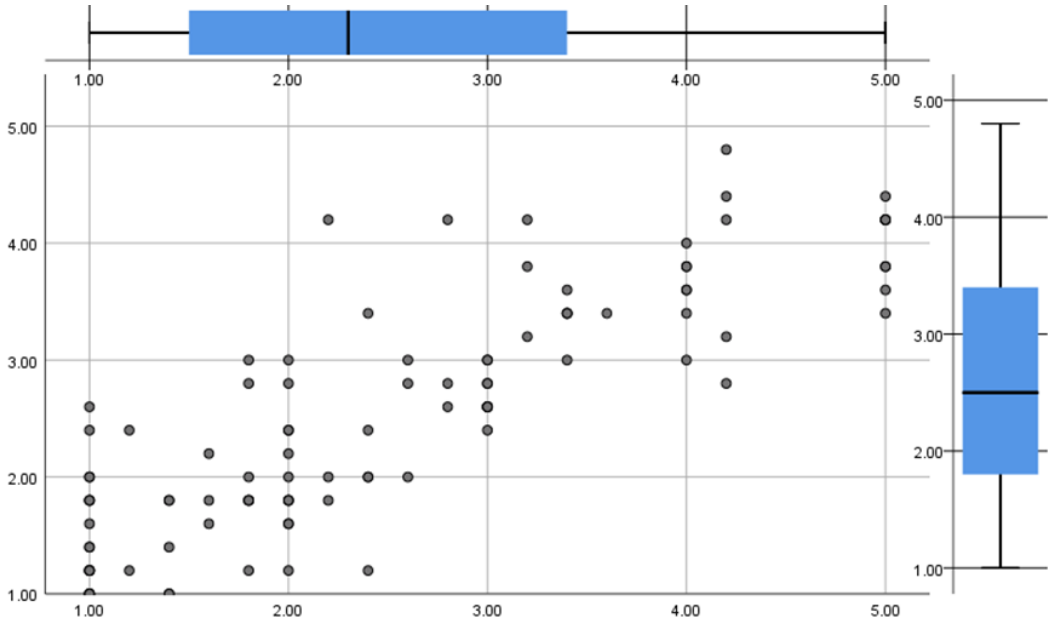
ANOVA

ANOVA illustrates the differences between the mean of free components and is certainly the evaluation of fluctuation (Rouder, 2016). The sig upsides of 0.000 indicate that the consequences are large enough to provide testable explanations. ANOVA portrays that, varieties of factors from the mean. Additionally, it prompts the distinguishing proof of mistakes. The importance esteem is .000 which implies that outcomes are precise and pertinent too.

Regression Graph

The graph shows the significance of regression results because most of the values are close to the regression lines

FIGURE 1
REGRESSION RESULTS



DISCUSSION, CONCLUSION AND IMPLICATIONS

It is an era of technology and Interactive education is the need of time. Students want to get practical knowledge rather than theoretical concepts. Moreover, two-way communication in the classroom is very important at the university level because students want to apply their knowledge in their career and for that purpose strong relationship between teacher and student is mandatory. The use of technology is beneficial from a learning point of view because it allows the teacher to transfer the knowledge more effectively and students can give feedback in the forms of questions and suggestions through an interactive session. However, the researchers criticized that, interactive session is important at the university level but they can't replace the traditional teaching and education method because theoretical perspective is also important before the practical demonstration of the subject. Furthermore, a few domains of study need traditional methods of study such as Mathematics and accounting. The researchers further criticized that, interactive sessions are not suitable for every student and instructor. For instance, few students feel shy in the social setup of teaching and felt comfortable in the traditional system of learning. The lack of training about the new system of education is the challenge in the adoption of the new system.

Based on the foregoing analysis and debate, it is concluded that the interactive system of education is a useful technique to promote educational practices in universities. Interactive education has a couple of advantages for students and teachers. Firstly, it promotes the use of technology in education and maintains the social and interactive environment in class. However, an interactive environment becomes useful after the appropriate training of staff and students. At the university level, the personal grooming of students is one of the major elements and an interactive classroom environment plays a positive role in the grooming of students through social interaction in the classroom. Secondly, an interactive session grabs the attention of students because of the strong relationship with the instructor. The interactive sessions in universities comprise of visual presentation of topics, prototype presentation of models, and use of multimedia techniques which develop a learning environment is a class. Interactive session believes in the collaborative working environment in class where students have the autonomy to discuss anything with the instructor and classmates as well. However, there are certain challenges faced by students and instructors as well regarding the adoption of interactive sessions. Firstly, the lack of training before implementation is a huge challenge that limits the scope of the technique. The desired technique involves advanced technology and extensive training is required to adopt this channel of education. Secondly, sometimes students do not feel comfortable in interactive education because most of them are used to traditional methods of learning. At last, the interactive sessions are not useful in all fields of education. Besides these challenges, interactive sessions of education are useful at the university level because it allows the students to learn practical things rather than just rely on theoretical approaches.

RECOMMENDATIONS

Based on the foregoing analysis and debate, couple of recommendations were drawn**.**

- The focus on institutes and universities on the development of interactive sessions is good to act but the training and development of staff are very important. If the instructor is not used to this new system of education, then the acquisition and deliverance of knowledge are difficult. Moreover, the awareness program must be arranged to convince the students to adopt an interactive system of education.
- The institutes should not replace the traditional system of education at the initial stage because it is difficult to adopt new technology as a whole. The universities should adopt interactive sessions as a supportive element to make full use of them in the long run.

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APPENDIX: QUESTIONNAIRE

The questionnaire is extremely confidential and the data collected from the participants are entirely for research purposes.

5.00 Strongly disagree 4.00 Disagree 3.00 Neutral 2.00 Agree 1.00 Strongly agree

SR. NO	**Interactive Education**	5.00	4.00	3.00	2.00	1.00
1	Interactive education (IE) allows the lecturer to demonstrate the new ideas					
2	Interactive learning maintains a healthy relationship between teacher and students					
3	Interactive education technique allows the practical demonstration of concepts					
4	Interactive education is important for grooming the perspective of university students**.**					
5	Interactive sessions are good for social perspective					
	Quality of Education					
6	Interactive sessions allow the teacher to deliver more knowledge in less time.					
7	EI education encourages the students to participate in-class discussion					
8	It motivates the students to bring innovation					
9	Interactive sessions allow the students to share knowledge with other classmates.					
10	Interactive learning sessions allow the students to get meaningful answers to the questions					
	Learning outcome					
11	Interactive sessions grab the attention of students**.**					
12	Interactive sessions are engaging for the students.					
13	Interactive sessions allow the students to learn beyond the practical concepts.					
14	Interactive sessions allow the students to work with passion					

Interactive learning maintains a healthy relationship between teacher and students

		Frequency	%	Valid %	Cumulative %
Valid	S. Agree	70	32.0	32.0	32.0
	Agree	50	22.8	22.8	54.8
	Neutral	31	14.2	14.2	68.9
	Disagree	39	17.8	17.8	86.8
	S. Disagree	29	13.2	13.2	100.0
	Total	219	100	100	

Interactive education is important for grooming the perspective of university students.

		Frequency	%	Valid %	Cumulative %
Valid	S. Agree	77	35.2	35.1	35.2
	Agree	62	28.3	28.4	63.5
	Neutral	20	9.1	9.1	72.6
	Disagree	52	23.7	23.7	96.3
	S. Disagree	8	3.7	3.7	100.0
	Total	219	100.0	100.0	

Interactive sessions allow the teacher to deliver more knowledge in less time.

		Frequency	%	Valid %	Cumulative %
Valid	S. Agree	61	27.9	27.9	27.9
	Agree	52	23.7	23.7	51.6
	Neutral	50	22.8	22.8	74.4
	Disagree	28	12.8	12.8	87.2
	S. Disagree	28	12.8	12.8	100.0
	Total	219	100.0	100.0	

EI education encourages the students to participate in-class discussion

		Frequency	%	Valid %	Cumulative %
Valid	S. Agree	34	15.5	15.5	15.5
	Agree	60	27.4	27.4	42.9
	Neutral	51	23.3	23.3	66.2
	Disagree	48	21.9	21.9	88.1
	S. Disagree	26	11.9	11.9	100.0
	Total	219	100.0	100.0	

Age * Interactive education (IE) allows the lecturer to demonstrate the new ideas

		S. Agree	Agree	Neutral	Disagree	S. Disagree	Total
Age	0-20	9	15	12	8	0	44
	20-35	25	34	16	20	20	115
	35 and above	19	21	6	6	8	60
Total		53	70	34	34	28	219

Age * EI education encourages the students to participate in-class discussion

		S. Agree	Agree	Neutral	Disagree	S. Disagree	Total
Age	0-20	1	10	15	11	7	44
	20-35	22	35	26	21	11	115
	35 and above	11	15	10	16	8	60
Total		34	60	51	48	26	219

Age * Interactive sessions allow the students to learn beyond the theoretical concepts.

		S. Agree	Agree	Neutral	Disagree	S. Disagree	
Age	0-20	9	7	7	17	4	44
	20-35	39	23	20	13	20	115
	35 and above	20	18	5	10	7	60
Total		68	48	32	40	31	219

		IE	QE	LO
IE	Pearson Correlation	1	.516**	.760**
	N	219	219	219
QE	Pearson Correlation	.516**	1	.833**
	N	219	219	219
LO	Pearson Correlation	.760**	.833**	1
	N	219	219	219

**. Correlation value is significant at the 0.01 level (2-tailed).

Reliability Statistics

Reliability Test (Cronbach's Alpha)	No of Items
.891	3

Model Summary

Model	R	R- Square	Adjusted value of R Square	Std. error Estimate
1(LO)	.760[a]	.578	.576	.78715
2 (QE)	.516[a]	.266	.263	.84918

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	176.736	1	176.736	285.238	.000[b]
	Residual	128.878	208	.620		
	Total	305.614	209			

a. Dependent Variable: LO
b. Predictors: (Constant), IE