

RELATIONSHIP BETWEEN FACULTY MEMBERS' TECHNOLOGICAL INTEGRATION EFFECTIVENESS AND STUDENTS' PERFORMANCE AT UNIVERSITY LEVEL

Dr Fahd Naveed Kausar (Corresponding Author)

Designation: Assistant Professor

Affiliation: School of Education, Minhaj University Lahore, Punjab, Pakistan

Email: s_fahdnaveed1@hotmail.com

Muhammad Irshad

Designation: Ph.D Scholar

Affiliation: School of Education, Minhaj University Lahore, Punjab, Pakistan

Email: muhammadirshad1989@gmail.com

Muhammad Usman Shah,

Designation: Assistant Professor

Affiliation: Department of management sciences, COMSATS University Islamabad, Attock campus, Punjab, Pakistan

Email: usmanlutfi@gmail.com

ABSTRACT

Technology is an integral part of our everyday lives. In fact, students in our public and private schools are considered digital natives and have become accustomed to always being connected to their devices and the Internet. Although classrooms may have access to many technology devices, there are several external and internal factors that affect the proper implementation of technology in classrooms. This study was descriptive in nature, focused on the relationship between faculty members' technological integration effectiveness and students' performance in the teaching and learning process. The purpose of this study was to find the relationship between faculty members' technological integration and student performance. The population was the students of all public and private universities in Lahore district. The sample was collected through the multistage simple random sampling technique. The instruments of the study were questionnaires. Reliability of the instrument was checked through Cronbach's Alpha. The validity of the instrument was insured by expert opinion. Descriptive and inferential techniques were used to analyze the data. The most obvious findings of the study inferred that there was a strong, positive correlation between students' performance and technological integration in higher education. While summing up the results of findings, it was finally encompassed that teachers' behavior towards technological integration in higher education is necessary for students' performance i.e. class participation, class achievement self-confidence etc.

Keywords: Faculty members' technological integration, students' performance, university level

Introduction

With the need for experience and understanding economy and the creation of educational technologies, higher education environments have experienced significant changes due to the impacts of modern technology and also modifying methods of teaching (Nellis, 2017). To ensure the quality of education in higher education, the role of teaching performance and efficiency must always be evaluated in preparing learners for their future professional activities. Once this implementation was understood as an institutional process of change, faculty members identified as "famously known resisters to innovation" played a significant part in its implementation (Garrison & Vaughan, 2013). As higher education institutions implement several renovation methods in education, faculty members may find it hard to maintain up with all the developments. We are surrounded by technology in the modern era. The way we apply scientific information for practical purposes is defined by technology in which techniques and processes are included. It is recognized in the field of education for having a good impact on students' learning. According to recent research, technology can effectively enhance education.

The purpose of this research is to explore the effect of technology integration on student motivation and engagement. The use of technology in education provides the advantage for enhancing academic achievement for both students and teachers (Courville, 2011). Usher (2012) conducted a study in which different applications of technology was use to encourage the pupils with the collaboration of other academic courses. The result of this study shows that if we link our real world circumstances with technology, students must perceive the objective of learning, increasing their curiosity an engagement (Badejo & Chakraborty, 2022).

Students can better understand complicated subjects by applying vast ideas of real-world circumstances leading to higher competency. To differentiate the instruction, encourage pupils, and incorporate students of all levels of skill teachers can use technology in the classroom. According to Edwards & Nuttall, (2015), the abundance of the world's information can be approachable by the use of technology in the age of modern statistics. Technology that is quite expensive and is particularly available to the wealthy has refined and become much more affordable (Francis, 2017). Students have growing up in a time when technology is everywhere, and instructors must also adapt to this new way of life. Teachers who are adapting to the technological lifestyle should teach with the help of technological tools in the classroom. Its purpose is not only for student's motivation but its purpose is just for better provision of educational environment (Gomez, et al., 2022).

Students who are familiar with technology and it is a topic of concern for them will get more motivation. It seems to the stance that in today's rising technology civilization, the modern-day classroom should reflect the inducing technology. In education process, the intrinsic value shows the reality base technical tools, enhancing interest and motivation (Al-Zahrani, 2015). These classrooms should meet the needs of students. Technology promotes the demand for different learning styles by endorsing a perception of institution as well as a significant experience Kausar, et al., 2023). According to Liu (2016), effective technology can improve education in many

subjects by motivating the students in the classroom, including math, social studies, and language (Sung, et al., 2016). Students with documented learning difficulties can benefit from the proper integration of technology through adaptive tools and hidden material while synchronizing with other students in a regular class session (Floyd and Judge, 2012).

Today's students have been surrounded by technology from their childhood (Zayyad, 2019). Almost all of their daily practice including their learning is intertwined with technology (Juma, & Shaalan, 2020). According to Tinio (2003), IT has a significant impact on knowledge acquisition and retention for both teachers and students. The availability of technological tools to teachers and student expands every year. For the integration of technology into the classroom, the teachers and school administrators are always-on trying to improve their ability for the improvement of students' performance. Internet-connected computers can connect students with content specialists from all over the world. Classrooms can be virtualized to allow students and teachers to collaborate. According to Cuban et al., (2001), technology provides opportunities for educators, but unless properly implemented, these tools will do little to transform the way we teach and learn (Juuti, et al., 2022).

It is a difficult task for instructors to implement technology in a proper way in this rapidly changing environment on a limited budget. There are various challenges to overcome this issue such as teachers must be trained in how to integrate technology; students must have access to equipment and knowledge of how to use it to learn, and administrators must be supportive of students and teachers who use technology to increase learning. One could argue that because schools spend millions on technology, it must be an effective tool for promoting learning. However, very few studies have been conducted to investigate how students feel about the technology integration that is experiencing in school. Understanding how teachers think about it and use technology, as well as how students evaluate the effectiveness of this learning opportunity, can help administrators make educated decisions about staff development and equipment purchases in their schools (Irby, 2017).

According to Costley (2014), technology always gives the positive impact on students learning. So, the significance of technology in educational institutions cannot be ignored. It has become easier for teachers to pass on knowledge with the help of technology (Li, & Juma'h, 2022). Today in our educational institutions, faculty members are focused on content rather than methods of teaching. The availability of educational technology in educational institutions will provide advanced methods of teaching to the faculty members. The availability of educational technology in educational institutions will give faculty members advanced methods of teaching. Technology has transformed how we think, perform, or play. The learning process is transformed when technology is effectively implemented. The way of teaching renovation in higher education has been shaped largely by emerging technologies that have been regarded as the driving force of institutional change (Li, et al., 2018). Distance education processes such as online learning programmers, virtual studies, hybrid learning implications, massive enormous online education, association and collaboration tools, classroom methods, systems to support collaborative learning strategies,

learning management systems, and so on are examples of this transformation. Even with such broad technology integration implications around faculty members, faculty members' use of technology for instructional purposes is every semester (Britten & Craig, 2006). There is no ambiguity that the faculty members' technological integration behaviors are never carried out, resulting in the tardy adoption of this renovation.

Faculty members who consider computers as problem-solving tools will try to change their way of teaching. They may be hesitant to consider teaching methods. When the faculty members integrate the technology in their classroom effectively, it gets better output from students. Integrated technology in education simply refers to the use of technology to enhance the teaching experience as well as students. Increased student engagement and motivation will be helped by technology and technology-supported learning settings. There are concerns regarding the effectiveness of teaching and meeting stakeholder expectations in higher education institutions due to the poor performance of technology integration in contrast to a rise in investment in technology implementation at the administrative level (Reid, 2014). As a result, institutes concentrate on increasing faculty affiliates' mindfulness of technology integration and improving their technology integration assistance.

The integration technology gives paths for differentiated instructions to meet the unique needs of students within a broader classroom climate. According to Oblinger and Hawkins (2006), the impact of technology integration on the instructional process is that technology products are unquestionably required in learning-teaching processes, and their role in knowledge delivery is extremely influential (Zeebaree, et al. 2020). Most universities have implemented face-to-face, virtual learning programs to fulfill students and teachers needs for effective technology integration in their classes which include educational activities, professional conferences, workshops, and discussions. The most popular PDs include classes, seminars, and peer mentoring (Desimone & Garet, 2015). Despite many faculty members facing difficulties to implement effective technology in their classrooms; this study will be highlighting the relationship between faculty members' technological integration effectiveness and their students' performance in higher education.

As technological innovation becomes more common in regular activities, educators must develop a current viewpoint about how to use technologies to improve integrated knowledge. In today's society, technology provides learners with the adaptability and able to respond to a wide range of situations and subject areas. According to Seifert, et al., (2022), technology can be used in a variety of instructional techniques. Although integrating technology can be difficult for the modern teachers but the teachers who accept the concept of change will discover the numerous doors for students that would not be available by intimidation of technology. Higher education institutions should access the teaching strategies in a more effective and comprehensive manner for using technology within the classroom. If we move towards the technology enhanced classrooms we see that it must be supported at all levels of appropriateness. It is vital to know how faculty recognizes

the implementation of classroom instruction technology tools. Teachers will be able to encourage and incorporate all pupils by using technology in the classroom (Park, et al., 2012).

Increasing students' performance and integrating technology as a tool is now a common goal. Policymakers and educators are investing the money in programs and teaching materials that will have the highest impact on education and student outcomes. If we want to give better impact on students learning, the use of technology in instructional process is important. The implementation of technology in the classrooms will get even greater importance (Costley, 2014). Many educators believe that integrating technology into the classroom is beneficial, meaningful, and required for school succession. Many teachers, however, are hesitant to make the shift, and many pupils are unmotivated to attempt. A survey was conducted at "Chicago Public Schools" in 2013. This survey shows that while 92 percent of students have some access of technology and internet at their home, a very few students used that technology for study purpose (Tondeur, et al., 2017).

Objective

1. To find the relationship between faculty members' technological integration and student performance at the university level.

Population of the Study

Students of all public and private universities in Lahore district was the population. The total number of universities in Lahore is 34 out of which 13 are public and 21 are private universities (HEC, 2022). The study ought to include a sizable student sample. Using a multistage simple random sampling method, the sample was taken. The researcher took three public and four private universities in Lahore through simple random sampling. Three faculties were selected from each university. Faculty was dividing in three parts i.e. social sciences, behavioral sciences and languages. One department was selected from each faculty through simple random sampling. Data was gathered from students. The sample size was 576 students and 288 students were selected from public and private universities respectively through simple random sampling. Using a multi stage simple random sampling method, the sample was taken. The instruments of this research were questionnaires.

DATA ANALYSIS AND INTERPRETATION

Relationship between Supportive Technology and classroom participation

Table 4.16

Correlation between Supportive Technology and Classroom Participation

		Supportive Technology	Classroom Participation
	Pearson Correlation	1	.488**
Supportive Technology	Sig. (2-tailed)		.000
	N	500	500

Classroom participation	Pearson Correlation	.488**	1
	Sig. (2-tailed)	.000	
	N	500	500

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

This table illustrates that relationship between supportive technology and classroom participation of students at university level. There is highly significant correlation between supportive technology and classroom participation of students. The Pearson correlation= 0.48 and $\alpha = 0.000$. So, there is low positive significant correlation between supportive technology and classroom participation of students at university level.

Relationship between Supportive Technology and Home task

Table 4.17

Correlation between Supportive Technology and Home Task

		Supportive Technology	Home Task
Supportive Technology	Pearson Correlation	1	.454**
	Sig. (2-tailed)		.000
	N	500	500
Home Task	Pearson Correlation	.454**	1
	Sig. (2-tailed)	.000	
	N	500	500

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

The table shows that relationship between Supportive Technology and Home task of students at university level. There is highly significant correlation between Supportive Technology and Home task of students. The Pearson correlation=0.45 and $\alpha = 0.000$. So, there is low positive significant correlation between Supportive Technology and Home task of students at university level.

Relationship between Supportive Technology and Class Achievement

Table 4.18

Correlation between Supportive Technology and Class Achievement

		Supportive Technology	Class Achievement
Supportive Technology	Pearson Correlation	1	.463**
	Sig. (2-tailed)		.000
	N	500	500
Class Achievement	Pearson Correlation	.463**	1
	Sig. (2-tailed)	.000	

N 500 500

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

The table shows that correlation between Supportive Technology and class achievement of students at university level. There is highly significant correlation between Supportive Technology and class achievement of students. The Pearson correlation=0.46 and $\alpha = 0.000$. So, there is low positive significant correlation between Supportive Technology and class achievement of students at university level.

Relationship between Supportive Technology and Self-confidence

Table 4.19

Correlation between Supportive Technology and Self-confidence

		Supportive Technology	Self-confidence
Supportive Technology	Pearson Correlation	1	.545**
	Sig. (2-tailed)		.000
	N	500	500
Self-confidence	Pearson Correlation	.545**	1
	Sig. (2-tailed)	.000	
	N	500	500

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

The above stand illustrates that correlation between Supportive Technology and Self-confidence of students in higher education. There is highly significant correlation between Supportive Technology and Self-confidence of learners. The Pearson correlation=0.54 and $\alpha = 0.000$. So, there is moderate positive significant correlation between Supportive Technology and Self-confidence of students at university level.

Relationship between effective assessment and classroom participation

Table 4.20

Correlation between Effective Assessment and Classroom Participation

		Effective Assessment	Classroom Participation
Effective Assessment	Pearson Correlation	1	.362**
	Sig. (2-tailed)		.000
	N	500	500
Classroom participation	Pearson Correlation	.362**	1
	Sig. (2-tailed)	.000	
	N	500	500

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

The table discloses the correlation between effective assessment and Classroom participation of students at university level. There is highly significant correlation between effective assessment and Classroom participation of students. The Pearson correlation=0.36 and $\alpha = 0.000$. So, there is low positive significant relationship between effective assessment and Classroom participation of students at university level.

Relationship between Effective assessment and home task

Table 4.21

Correlation between Effective Assessment and Home Task

		Effective Assessment	Home Task
Effective Assessment	Pearson Correlation	1	.375**
	Sig. (2-tailed)		.000
	N	500	500
Home Task	Pearson Correlation	.375**	1
	Sig. (2-tailed)	.000	
	N	500	500

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

The table demonstrates the relation between effective assessment and Home Task of students at university level. There is highly significant correlation between effective assessment and Home Task of students. The Pearson correlation=0.37 and $\alpha = 0.000$. So, there is low positive significant relationship between effective assessment and Home Task of students at university level.

Relationship between Effective assessment and class achievement

Table 4.22

Correlation between Effective Assessment and Class Achievement

		Effective Assessment	Class Achievement
Effective Assessment	Pearson Correlation	1	.412**
	Sig. (2-tailed)		.000
	N	500	500
Class Achievement	Pearson Correlation	.412**	1
	Sig. (2-tailed)	.000	
	N	500	500

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

Table 4.22 demonstrates that relation between effective assessment and Class Achievement of students at university level. There is highly significant correlation between effective assessment

and Class Achievement of students. The Pearson correlation=0.412 and $\alpha = 0.000$. So, effective assessment and Class Achievement of students at university level will have low positive statistically significant relationship.

Relationship between Effective assessment and self confidence

Table 4.23

Correlation between Effective Assessment and Self Confidence

		Effective Assessment	Self Confidence
Effective Assessment	Pearson Correlation	1	.469**
	Sig. (2-tailed)		.000
	N	500	500
Self-confidence	Pearson Correlation	.469**	1
	Sig. (2-tailed)	.000	
	N	500	500

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

The above stand illustrates that correlation between effective assessment and Self-confidence of students in higher education. There is highly significant correlation between effective assessment and Self-confidence of students. The Pearson correlation =0.469 and $\alpha = 0.000$. So, there is low positive significant correlation between effective assessment and Self-confidence of learners at university level.

Relationship between Learning Infrastructure and classroom participation

Table 4.24

Correlation between Learning Infrastructure and Classroom Participation

		Learning Infrastructure	Classroom Participation
Learning Infrastructure	Pearson Correlation	1	.390**
	Sig. (2-tailed)		.000
	N	500	500
Classroom participation	Pearson Correlation	.390**	1
	Sig. (2-tailed)	.000	
	N	500	500

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

The above stand illustrates that relationship between Learning Infrastructure and Classroom participation of students at university level. There is highly significant correlation between Learning Infrastructure and Classroom participation of students. The Pearson correlation=0.39 and

$\alpha = 0.000$. So, there is low positive significant relationship between Learning Infrastructure and Classroom participation of students at university level.

Relationship between Learning Infrastructure and Home task

Table 4.25

Correlation between Learning Infrastructure and Home task

		Learning Infrastructure	Home Task
Learning Infrastructure	Pearson Correlation	1	.474**
	Sig. (2-tailed)		.000
	N	500	500
Home Task	Pearson Correlation	.474**	1
	Sig. (2-tailed)	.000	
	N	500	500

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

The above stand illustrates that relationship between Learning Infrastructure and Home Task of students at university level. There is highly significant correlation among Learning Infrastructure and Home Task of students. The Pearson correlation = 0.474 and $\alpha = 0.000$. So, there is low positive significant relationship between Learning Infrastructure and Home Task of students at university level.

Relationship between Learning Infrastructure and class achievement

Table 4.26

Correlations between Learning Infrastructure and class achievement

		Learning Infrastructure	Class Achievement
Learning Infrastructure	Pearson Correlation	1	.436**
	Sig. (2-tailed)		.000
	N	500	500
Class Achievement	Pearson Correlation	.436**	1
	Sig. (2-tailed)	.000	
	N	500	500

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

The above stand illustrates that relationship between Learning Infrastructure and Class Achievement of students at university level. Learning Infrastructure and Class Achievement of students are highly statistically significant relationship. The Pearson correlation = 0.43 and $\alpha = 0.000$. So, there is low positive statistically significant correlation between Learning Infrastructure and Class Achievement of students at university level.

Relationship between Learning Infrastructure and self-confidence

Table 4.27

Correlation between Learning Infrastructure and self-confidence

		Learning Infrastructure	Self Confidence
Learning Infrastructure	Pearson Correlation	1	.472**
	Sig. (2-tailed)		.000
	N	500	500
Self-confidence	Pearson Correlation	.472**	1
	Sig. (2-tailed)	.000	
	N	500	500

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

The above stand illustrates that relationship between Learning Infrastructure and Self-confidence of students at university level. There is highly probable relation among Learning Infrastructure and Self-confidence of students. The Pearson correlation= 0.47 and $\alpha = 0.000$. So, there is low positive significant relation amongst Learning Infrastructure and Self-confidence of students at university level.

Relationship between Technology content knowledge and Classroom participation

Table 4.28

Correlation between Technology content knowledge and Classroom Participation

		Technology Content Knowledge	Classroom Participation
Technology Content Knowledge	Pearson Correlation	1	.415**
	Sig. (2-tailed)		.000
	N	500	500
Classroom Participation	Pearson Correlation	.415**	1
	Sig. (2-tailed)	.000	
	N	500	500

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

The above stand illustrates that relationship between Technology Content Knowledge and correlation between Technology Content Knowledge and Classroom participation of students. The Pearson correlation= 0.41 and $\alpha = 0.000$. So, Technology Content Knowledge and Classroom participation of university students have low positive significant correlation.

Relationship between Technology content knowledge and home task

Table 4.29

Correlation between Technology Content Knowledge and home Task

		Technology Content	
		Knowledge	Home Task
Technology Content Knowledge	Pearson Correlation	1	.533**
	Sig. (2-tailed)		.000
	N	500	500
Home Task	Pearson Correlation	.533**	1
	Sig. (2-tailed)	.000	
	N	500	500

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

The following table illustrates that relationship between Technology Content Knowledge and Home Task of students at university level. There is highly statistically significant relationship among Technology Content Knowledge and Home Task of students. The Pearson correlation =0.53 and $\alpha = 0.000$. So, there is moderate positive notable relation between Technology Content Knowledge and Home Task of students at university level.

Relationship between Technology content knowledge and class achievement

Table 4.30

Correlation between Technology content knowledge and class achievement

		Technology Content Knowledge	Class Achievement
Technology Content Knowledge	Pearson Correlation	1	.460**
	Sig. (2-tailed)		.000
	N	500	500
Class Achievement	Pearson Correlation	.460**	1
	Sig. (2-tailed)	.000	
	N	500	500

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

Table 4.30 illustrates that relationship between Technology Content Knowledge and Class Achievement of students at university level. There is highly remarkable relation between Technology Content Knowledge and Class Achievement of students. The Pearson correlation=0.46 and $\alpha = 0.000$. So, there is low positive substantial correlation among Technology Content Knowledge and Class Achievement of students at university level.

Relationship between Technology content knowledge and self-confidence

Table 4.31

Correlation between Technology content knowledge and self-confidence

		Technology Content Knowledge	Self-confidence
Technology Content Knowledge	Pearson Correlation	1	.454**
	Sig. (2-tailed)		.000
	N	500	500
Self-confidence	Pearson Correlation	.454**	1
	Sig. (2-tailed)	.000	
	N	500	500

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

The table illustrates that relationship between Technology Content Knowledge and Self-confidence of students at university level. There is highly significant relationship between Technology Content Knowledge and Self-confidence of students. The Pearson correlation=0.45 and $\alpha = 0.000$. So, there is low positive considerable relationship among Technology Content Knowledge and Self-confidence of students at university level.

Relationship between Technology integration and students' performance

Table 4.32

Correlation between Technology integration and students' performance

		Technology Integration	Student Performance
Technology Integration	Pearson Correlation	1	.633**
	Sig. (2-tailed)		.000
	N	500	500
Student Performance	Pearson Correlation	.633**	1
	Sig. (2-tailed)	.000	
	N	500	500

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

This table demonstrates the relationship between Technology integration and performance of students at higher education. There is highly remarkable relation among Technology integration and students' performance of students. The Pearson correlation=0.63 and $\alpha = 0.000$. So, this shows that technology integration and students' performance in higher education have moderate positive notable relationship.

Findings

- 1- The Pearson correlation = 0.48 and $\alpha = 0.000$. So, there is low positive significant correlation between supportive technology and classroom participation of students at university level. (Table 4.16)
- 2- The Pearson correlation = 0.45 and $\alpha = 0.000$. So, there is low positive significant correlation between Supportive Technology and Home task of students at university level. (Table 4.17)
- 3- The Pearson correlation = 0.46 and $\alpha = 0.000$. So, there is low positive significant correlation between Supportive Technology and class achievement of students at university level. (Table 4.18)
- 4- The Pearson correlation = 0.54 and $\alpha = 0.000$. So, the university students showing moderate positive significant correlation among the Supportive Technology and Self-confidence. (Table 4.19)
- 5- The Pearson correlation = 0.36 and $\alpha = 0.000$. So, there is low positive significant relationship between effective assessment and Classroom participation of students at university level. (Table 4.20)
- 6- The Pearson correlation = 0.37 and $\alpha = 0.000$. So, there is low positive significant relationship between effective assessment and Home_Task of students at university level. (Table 4.21)
- 7- The Pearson correlation = 0.412 and $\alpha = 0.000$. So, effective assessment and Class Achievement showing low positive significant relationship of students at university level. (Table 4.22)
- 8- The Pearson correlation = 0.469 and $\alpha = 0.000$. So, effective assessment and Self_Confidence of students at university level having low positive significant relationship. (Table 4.23)
- 9- The Pearson correlation = 0.39 and $\alpha = 0.000$. So, there is low positive significant relationship between Learning Infrastructure and Classroom participation of students at university level. (Table 4.24)
- 10- The Pearson correlation = 0.474 and $\alpha = 0.000$. So, there is low positive significant relationship between Learning Infrastructure and Home Task of students at university level. (Table 4.25)
- 11- The Pearson correlation = 0.43 and $\alpha = 0.000$. So, there is low positive significant association among Learning Infrastructure and Class Achievement of students at university level. (Table 4.26)
- 12- The Pearson correlation = 0.47 and $\alpha = 0.000$. So, there is low positive significant relationship between Learning Infrastructure and Self_Confidence of students at university level. (Table 4.27)
- 13- The Pearson correlation = 0.41 and $\alpha = 0.000$. So, there is low positive significant association for both Technology Content Knowledge and Classroom participation of students at university level. (Table 4.28)

- 14- The Pearson correlation = 0.53 and $\alpha = 0.000$. So, there is moderate significantly positive correlation for both Technology Content Knowledge and Home Task of students at university level. (Table 4.29)
- 15- The Pearson correlation = 0,46 and $\alpha = 0.000$. So, there is low positive significant correlation among Technology Content Knowledge and class Achievement of students at university level. (Table 4.30)
- 16- The Pearson correlation = 0.45 and $\alpha = 0.000$. So, there is low positive significant correlation among Technology Content Knowledge and Self-confidence of students at university level. (Table 4.31)
- 17- The Pearson correlation = 0.63 and $\alpha = 0.000$. So, there is moderate positive significant correlation among Technology integration and students' performance at university level. (Table 4.32)

Discussion and Conclusion

The findings emphasize the links between faculty members' technological integration and student achievement. In academic settings, the incorporation of technology has gradually shifted traditional learning environments. Today, teachers can use a variety of technological tools and programs in their classrooms. Enhanced knowledge development has been associated with the utilization of digital technology in teaching and learning process as well as improved academic success. However, if digital technology is not adequately and consistently integrated into teaching and learning, its impact will be limited. The utilization of digital technology is an essential component of the modern student experience in higher education.

The potential application of various digital technologies to enable, extends, and even improves learning attainment, and hence students' total academic performance. Henderson et al. investigated university students' involvement with virtual innovations and their real experiences of using digital technology during highlighting students' academic achievements and perceptions of crucial components of digital technology during learning and studying (Al-Abdullatif, & Gameil, 2021). When used to enhance students' participation in relevant and theoretically authentic courses, technology integration in the classroom may be a terrific learning tool. Technology is just like a tool. It ought to be used when it's the most efficient method of instruction for pupils. Technology may be a very beneficial tool for kids, increasing their participation. As part of their academic program, university students should begin using standard technology tools.

Technology must be integrated into the classroom so that students can be taught how to use it efficiently and gain exposure to more advanced applications that may be use autonomously as they grow older (Maja, 2023). There was a close relationship between Technology integration (Supportive Technology, Effective Assessment, Learning Infrastructure and Technology Content Knowledge) and students' performance (Classroom participation, Home Task, Class Achievement, Self-confidence). It goes without stating that having a working knowledge of technology helps instructors keep up to date on how to use cutting-edge educational technology

within the classroom. It has recently become such an essential element of human life throughout the world, and also no surface can operate correctly without it. Teachers' performance can be enhanced with the help of technology. Technology influences on assignment delivery, assessment and evaluation criteria for efficient learning and teaching methods, and teacher effectiveness (Ahmed, et al., 2019).

Technology opens up new avenues for problems such as learning talents and abilities and student-centered training, and it encourages deeper intellectual stages, in addition to the teachers' thoughts and guidelines. It can, however, make it challenging for teachers to fully incorporate technology into their practices. Because of the ignorance, technology is viewed as a replacement for other apparel in traditional instruction instead of embracing new mentoring forms and strategies. This encourages the student to use technology more frequently for valuable efforts and meaningful participation. The computer-based classroom setting described above is an appropriate learning environment that promotes student accountability. Providing students with resources such as the World Wide Web and e-mail according to teachers, which motivates them to take possession of their education and practice responsible behavior (Drayton et al., 2010). The benefits of technology in the classroom are eventually realized when teachers participate where it is most valuable and appropriate. Instructors can use the virtual function to create and evaluate student progress and also provide instant results by trying to make one more interaction with their pupils rather than just going to wait till after university to evaluate homework assignments.

When technology is used properly, it can help the instructors to keep them by saving their time to distinguish lectures for students. Educators can devote a bit less time and effort to educating people on how to use online tools to generate their inventions, whether in assistance of or in objection to this assumption. When students are allowed to experiment with technology at their own, learning becomes better. Faculty members' technology integration (Supportive Technology, Effective Assessment, Learning Infrastructure, and Technology Content Knowledge) had a highly significant effect on students' performance (Classroom participation, Home Task, Class Achievement, Self-confidence) at the tertiary level. The use of technology in the classroom can enhance student engagement, human activities, results, learning outcomes, and involvement.

Technology has the capability to open up opportunities for all students to learn. It was concluded that there was highly significant relationship and effect of faculty members' Technology integration (Supportive Technology, Effective Assessment, Learning Infrastructure and Technology Content Knowledge) on students' performance (Classroom participation, Home Task, Class Achievement, Self-confidence) at university level. Technology is omnipresent and is totally incorporated into the average student's daily life, providing the student with access to an enormous amount of information (Egbert et al., 2009). The efficient use of this technology within the classroom has the benefit of helping to increase academic achievement among students and teachers of all ability levels (Yang, & Walker, 2015). Although there is a need for technological integration, many schools have failed to adopt this essential involvement. However, the current

level of technology incorporation and perception of its effectiveness will only increase the distance between both student and instructor. To make sure that a classroom in the 21st century and to set it up, a paradigm shift in the effective implementation of technology in education is required.

References

- Ahmed, G., Arshad, M., & Tayyab, M. (2019). Study of effects of ICT on professional development of teachers at university level. *European Online Journal of Natural and Social Sciences: Proceedings*, 8(2 (s)), pp-162.
- Al-Abdullatif, A. M., & Gameil, A. A. (2021). The Effect of Digital Technology Integration on Students' Academic Performance through Project-Based Learning in an E-Learning Environment. *International Journal of Emerging Technologies in Learning*, 16(11).
- Al-Zahrani, A. (2015). The Place of Technology Integration in Saudi Pre-Service Teacher Education: Matching Policy with Practice. *Turkish Online Journal of Educational Technology-TOJET*, 14(1), 151-162.
- Badejo, J. A., & Chakraborty, J. (2022). The effects of technology on incarcerated student motivation and engagement in classroom-based learning. *Human-Intelligent Systems Integration*, 4(3-4), 71-80.
- Britten, J. S., & Craig, P. (2006). Developing Contextualized Faculty Training: Faculty development to support university-wide digital portfolio initiatives. *College Quarterly*, 9(2), n2.
- Costley, K. C. (2014). The positive effects of technology on teaching and student learning. *Online submission*.
- Cuban, L., Kirkpatrick, H., & Peck, C. (2001). High access and low use of technologies in high school classrooms: Explaining an apparent paradox. *American educational research journal*, 38(4), 813-834.
- Courville, K. (2011). Technology and Its Use in Education: Present Roles and Future Prospects. *Online Submission*.
- Courville, K. (2011). Educational Technology: Effective Leadership and Current Initiatives. *Online Submission*.
- Desimone, L. M., & Garet, M. S. (2015). Best practices in teacher's professional development in the United States.
- Drayton, B., Falk, J. K., Stroud, R., Hobbs, K., & Hammerman, J. (2010). After installation: Ubiquitous computing and high school science in three experienced, high-technology schools. *Journal of Technology, Learning, and Assessment*, 9(3), n3.
- Egbert, J., Huff, L., McNeil, L., Preuss, C., & Sellen, J. (2009). Pedagogy, process, and classroom context: Integrating teacher voice and experience into research on technology-enhanced language learning. *The Modern Language Journal*, 93, 754-768.
- Edwards, S., & Nuttall, J. (2015). Teachers, technologies and the concept of integration. *Asia-Pacific Journal of Teacher Education*, 43(5), 375-377.

- Floyd, K. K., & Judge, S. L. (2012). The efficacy of assistive technology on reading comprehension for postsecondary students with learning disabilities. *Assistive Technology Outcomes and Benefits*, 8(1), 48-64.
- Francis, J. (2017). The effects of technology on student motivation and engagement in classroom-based learning.
- Irby, D. R. (2017). Middle school student and teacher perceptions about the effectiveness of the technology integration in the classroom.
- Garrison, D. R., & Vaughan, N. D. (2013). Institutional change and leadership associated with blended learning innovation: Two case studies. *The internet and higher education*, 18, 24-28.
- Gomez, F. C., Trespalacios, J., Hsu, Y. C., & Yang, D. (2022). Exploring teachers' technology integration self-efficacy through the 2017 ISTE Standards. *TechTrends*, 1-13.
- Juma, M., & Shaalan, K. (2020). Cyberphysical systems in the smart city: Challenges and future trends for strategic research. In *Swarm Intelligence for Resource Management in Internet of Things* (pp. 65-85). Academic Press.
- Juuti, K., Kervinen, A., & Loukomies, A. (2022). Quality over frequency in using digital technology: Measuring the experienced functional use. *Computers & Education*, 176, 104361.
- Kausar, F. N., Anwar, S., Kulsoom, S., & Butt, F. U. (2023). Faculty Members' Technological Integration Effectiveness and Students' Performance: An overview of the Perceptions of University Teachers. *Pakistan Journal of Humanities and Social Sciences*, 11(3), 3337-3346.
- Li, M., Porter, A. L., & Suominen, A. (2018). Insights into relationships between disruptive technology/innovation and emerging technology: A bibliometric perspective. *Technological Forecasting and Social Change*, 129, 285-296.
- Li, Y., & Juma'h, A. H. (2022). The Effect of Technological and Task Considerations on Auditors' Acceptance of Blockchain Technology. *Journal of Information Systems*, 36(3), 129-151.
- Liu, P. (2016). Technology integration in elementary classrooms: Teaching practices of student teachers. *Australian Journal of Teacher Education*, 41(3), 6.
- Maja, M. M. (2023). Teachers' Perceptions of Integrating Technology in Rural Primary Schools to Enhance the Teaching of English First Additional Language. *Journal of Curriculum Studies Research*, 5(1), 95-112.
- Nellis, M. D. (2017). Transitions in US higher education: Implications for geography learning. *Journal of Geography in Higher Education*, 41(2), 155-165.
- Oblinger, D. G., & Hawkins, B. L. (2006). The Myth about Student Competency. *Educause review*, 41(2), 12-13.
- Park, Y., Geum, Y., & Lee, H. (2012). Toward integration of products and services: Taxonomy and typology. *Journal of Engineering and Technology Management*, 29(4), 528-545.
- Reid, P. (2014). Categories for barriers to adoption of instructional technologies. *Education and Information Technologies*, 19, 383-407.
- Seifert, T., Song, L., Waldman, T., & Wang, Z. (2022). 151 A Cross-Culture Examination of Preservice Teachers' Technology Integration Self-Efficacy. *Enhancing Values of Dignity, Democracy, and Diversity in Higher Education: Comparative Insights for Challenging Times*.

- Sung, Y. T., Chang, K. E., & Liu, T. C. (2016). The effects of integrating mobile devices with teaching and learning on students' learning performance: A meta-analysis and research synthesis. *Computers & Education, 94*, 252-275.
- Tinio, V. L. (2003). ICT in Education.
- Tondeur, J., Pareja Roblin, N., van Braak, J., Voogt, J., & Prestridge, S. (2017). Preparing beginning teachers for technology integration in education: Ready for take-off?. *Technology, Pedagogy and Education, 26*(2), 157-177.
- Usher, A. (2012). 6. What Nontraditional Approaches Can Motivate Unenthusiastic Students?. *Center on Education Policy*.
- Yang, S., & Walker, V. (2015). A pedagogical framework for technology integration in ESL classrooms: The promises and challenges of integration. *Journal of Educational Multimedia and Hypermedia, 24*(2), 179-203.
- Zayyad, M. (2019). Incorporating Assistive Technology for students with disabilities. M., Shelley & SA, Kiray (eds.). *Education Research Highlights in Mathematics, Science and Technology. ISRES Publishing*, 271-285.
- Zeebaree, M., Ismael, G. Y., Nakshabandi, O. A., Saleh, S. S., & Aqel, M. (2020). Impact of innovation technology in enhancing organizational management. *Studies of Applied Economics, 38*(4).