

INFORMATION TECHNOLOGY IN TEACHING AND LEARNING IN EDUCATION

PhD. can. Fakete Duraku

fakete_duraku@hotmail.com

Abstract: *Information technology has now become a key factor in the educational process, and it is changing the teaching as well as the learning methods. This research paper discusses the advantages of technology in vocational schools through curriculum development and the jobs it brings to the students that were from it, focusing on the curriculum plan. The connection of software and vocational schools is plenty, and the put-together will certainly lead to several more job choices in the future of childcare. While the internet and the use of gadgets can be quite good on one side, they could also be the source of problems now and then.*

This therefore calls for equipping vocational school students with appropriate skills for engagement in modern professions through the use of educational technologies. The information technology setup consequently presents a change in the approach to education delivery and how both the teachers and students achieve professional goals. Its success depends on the establishment of the digital platforms for information consistency with the objectives of education as well as the accessibility of the teaching materials.

The 21st-century vocational curriculum has to be adjusted to categorize learners for the fostering of critical thinking, innovation, life, and career skills, applying modern teaching methods. Teachers' and principals' professional development is indispensable to integrating those competencies in a practical manner within vocational education.

"Integration of Information Technology in Curriculum Planning for Vocational Schools" provides the essence and barriers of information technology integration within vocational education for the Municipality of Prishtina. The present dissertation thesis, based on extensive literature research and prior studies, will be proposing strategies for optimizing curriculum planning with information technology, addressing implications for teaching and the job market.

The key to success in vocational education is to have a strong information technology infrastructure that will allow for security and support in teaching and learning. Investments in infrastructure will involve computers, high-speed internet, secure data storage systems, and a variety of other advanced learning applications and platforms.

Keywords: *information technology, vocational schools, curriculum planning, education, digital technology, professional development, 21st-century skills, teaching methods, job market, infrastructure.*

Introduction

Information technology has influenced many aspects of our lives, including the process of teaching and learning in education. Digital technology in the classroom and its use to assist in teaching and learning have provided new opportunities and positive effects on the education process. However, sustainable and regular planning for technology in teaching is required to achieve successful results, as is ensuring adequate resources and proper teacher training.

The application of educational technology in vocational schools has become increasingly important in preparing students for the technology job market. The use of technology in teaching can help develop the knowledge, skills, and competencies that students will need in their professional lives. The way we teach and learn with informative technology has changed recently. In this way, information technology plays a role in helping teachers and students achieve their professional goals for the future.

The teaching through information technology starts with a digital platform by the school, which should align with the educational profiles and professional content. Therefore, the teacher needs to prepare the teaching material and ensure that is organized and accessible to the students. To meet the needs of 21st-century learners, schools need to adopt a curriculum that integrates critical thinking and innovation in vocational education and life and career skills and utilize 21st-century teaching methods.

The professional development of 21st-century skills is significant to prepare teachers and principals to integrate these skills into their schools. The advancement of information technology has influenced vocational schools in various ways, offering a wide range of opportunities for teaching and learning.

In vocational schools, information technology is used to enhance the effectiveness of the teaching process by providing a wide range of instructional materials and resources for students. Through advanced learning platforms, students can follow lessons in personalized ways and use information technology to develop their knowledge.

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The use of information technology in teaching and learning is interrelated and mutually supported, aiming to improve and enhance efficiency in the educational process. Information technology, as an advanced field, finds application and influences the quality of teaching and learning. It is also a catalyst for radical changes in the practices of professional schools and, indeed, a tool for preparing students for the future.

Success in implementing educational policies with information technology will be linked to significant knowledge in the application of technologies in the education sector as an crucial field in social life for future generations and its implementation in the teaching process.

The new generation of teachers should be highly motivated and skilled in the teaching process for the application of information technology, as they can assist older teachers who still rely on outdated technology and methodologies in the teaching process. More and more teachers are using technological tools, through information technology, to improve learning in academic subjects.

(Working Group, 2011). **The use of information technology in teaching and learning can be applied in three ways:**

- **Learning about Information Technology:** Teachers and students develop skills and knowledge in using information technology for the teaching process.
- **Learning with Information Technology:** Teachers and students use additional resources for information technology, supported by the curriculum and the teaching process.
- **Learning through Information Technology:** Teachers and students use information technology to transform the teaching and learning process into new, advanced, absorbable, easy-to-understand, engaging, and reproducible ways.

Many educators and teachers who dare to use various types of computers in teaching have improved the teaching and learning process in this way.

If we are teachers of techniques within an appropriate framework of children's teaching processes, their abilities in learning related to the subject and information technology devices will

expand, and taking skills from information technology should be integrated into every curriculum field.

The organization of the teaching process at the proper level depends on cooperation within the teaching staff and between individual teachers and school administration, as well as the relevance of the factors surrounding the class and individual students. The choice of a suitable classroom space for the use of information technology is also significant.

Information technology has had a significant impact on the content of the teaching process, as well as the improvement and growing awareness of proper organization and teaching methods through computers. Information technology has, in a very short period of time, influenced the construction of a modern society.

Teaching and learning can be successful if they are realized through the implementation of electronic communication tools between teachers and students.

The application of pedagogy through IT has high advantages for motivation, aiding previous learning, providing new teaching equipment, activating students, ensuring systematic and sustainable reactions, and providing a more practical and informative source for expanded studying. Traditional studying based on a paradigm of education, is called the reproduction of knowledge model. This model is based on assumptions about knowledge as an objective to be acquired.

The aim of the teaching process in learning is to transfer knowledge from static sources of information (the teacher or the text) to the learner, who is a passive recipient of knowledge. However, contemporary education emerged as a need to transition from the method of knowledge reproduction to the model of skill development, respecting both the teacher and the learner as partners in the collaborative construction of fundamental knowledge that needs to be embraced.

Each learner needs to undergo an individual transformation by applying technological devices to gather knowledge. They should not only independently acquire information but also manage, analyze, and convert it into knowledge. The information technology teacher is, in fact, a facilitator who assists the learner in their own way of learning and successfully processing information with knowledge.

(Corrigan, et al., 2011). **The proposed seven areas of knowledge for teaching are:**

- Content knowledge,
- Pedagogical knowledge,
- School knowledge,
- Student knowledge,
- Curriculum knowledge,
- Educational knowledge,
- Pedagogical content knowledge

Corrigan et al. (2011) proposed that the seven areas of knowledge for teaching underpin the complexity of effective teaching. Educators who are sound in these domains are more prepared to meet the diverse needs of their students, to negotiate the complexities of the education system, and to continue to improve their teaching practices. This framework is important, as this is what makes preparation and continuous professional development enable teachers to learn to better create educators who positively teach their pupils.

(UNESCO, 2004) Information technology can be considered in combination with other specific technologies. Informatics refers to the science related to the design, implementation, evaluation, use, and maintenance of information processing systems, including hardware and software too. Information technology in education exists at the crossroads between educational policies and technological changes.

In educational pedagogies, the use of information and communication technology has become core in the process of learning. It allows access to information and makes it possible for distance learning, thus further widening the possibilities for students and teachers alike. There will be allowed personalized learning and enhanced knowledge management and utilization competencies of students with new advanced technologies: distance learning platforms, mobile learning applications, and other forms of information technologies. However, it should be noted that ICT alone is not the sole solution but rather should complement teaching methodology in order to gain better learning outcomes. Information and communication technology is continuously evolving and developing to bring improvement to the education system. There have been several technologies in vocational and professional education and training.

(Maclean, 2007). Teachers are expected to:

- Set high expectations that inspire, motivate, and challenge students.
- Promote advancement and good performance from students.
- Demonstrate adequate knowledge of the subject and curriculum.
- Plan and deliver well-structured lessons.
- Adapt teaching to respond to the strengths and needs of all students.
- Use accurate and productive assessment.
- Manage behavior effectively to ensure a positive and safe learning environment.
- Fulfill broader professional responsibilities

These are eight main expectations for teachers. Teachers should be engaged in developing a learning environment that inspires, motivates, and challenges students, promoting progress and good results.

They should also demonstrate good knowledge of the subject matter and the curriculum and plan and deliver structured teaching. Teachers should adapt their teaching to respond to the strengths and needs of all students, use accurate and productive assessment, manage behavior effectively, and fulfill broader professional responsibilities.

Technology can facilitate educational reform. Students and teachers with positive attitudes toward technology do more and achieve multidimensional benefits. Educational technology is the application of suitable tools, techniques, and processes that facilitate implementation, memory, and cognition to enhance teaching practices and improve learning outcomes. Educational technology has many components, including a cyclical process, physical and conceptual tools, and multiple nodes in the relationships between learners and facilitators.

The use of ICT in vocational schools will help to realize the learning objectives to serve teaching development. Application of ICT in teaching and learning is made through:

1. Helping students to research, develop technological skills, and interface with technology.
2. Offering new and functional methods of learning, including distance learning and personalized learning.
3. Practice developing functional and applicable skills in the use of technologies relevant to their professional fields.

4. Offer new ways of measuring and tracking learners' performance with technology.

5. Increase interaction among students and instructors through technologies of communication, such as chat, forums, and video conferencing.

In addition, for effective implementation of ICT in vocational schools, teachers should be trained and able to use the most appropriate technologies and develop a strategy that ensures effective integration of ICT within the teaching process.

Within the modern context of education, some trends have set a pace for teaching and learning with the use of ICT. New technologies allow educators to seek innovative and interactive methods of presenting information and enabling students to understand it. The use of ICT within the learning environment would involve the adoption of a vast array of resources and tools: computers, tablets, projectors, educational software, the internet, and an array of digital resources to support education and assist students in learning.

The challenge to integration, therefore, relates to the fact that technologies are continually being developed and improved. This will also put demands on upgrades of systems in order for these to remain operational. While no great concern was paid either to upkeep or replacement of devices in the past, it is a reality that today's educational entity must face regarding updates to the technology infrastructure.

The use of technology in education goes beyond the four corners of a classroom or school and expands to the world as a whole. It plays a vital role in increasing education internationally. Technology has expanded and goes beyond physical distance and time zones by increasing access to teaching and learning. It has facilitated the growth of digital learning platforms, e-books, webinars, and other digital materials that are quite friendly and accessible from anywhere in the world.

This, therefore, will democratize education, enabling people at all levels to have quality access to a better educational curriculum. With such a promising field, though, much caution has to be highly exercised when contemplating the application of technologies into educational sectors. This is because even as technology ushers in a revolution of learning, it takes place in such a manner that its impact might be unequal, thus exacerbating the differences, while policy and the system need to make thoughtful and justifiable deployment. In such a case, the digital divide needs

to be minimized so that all students are afforded equal opportunities to be prepared with resources and tools for success in a digitized era.

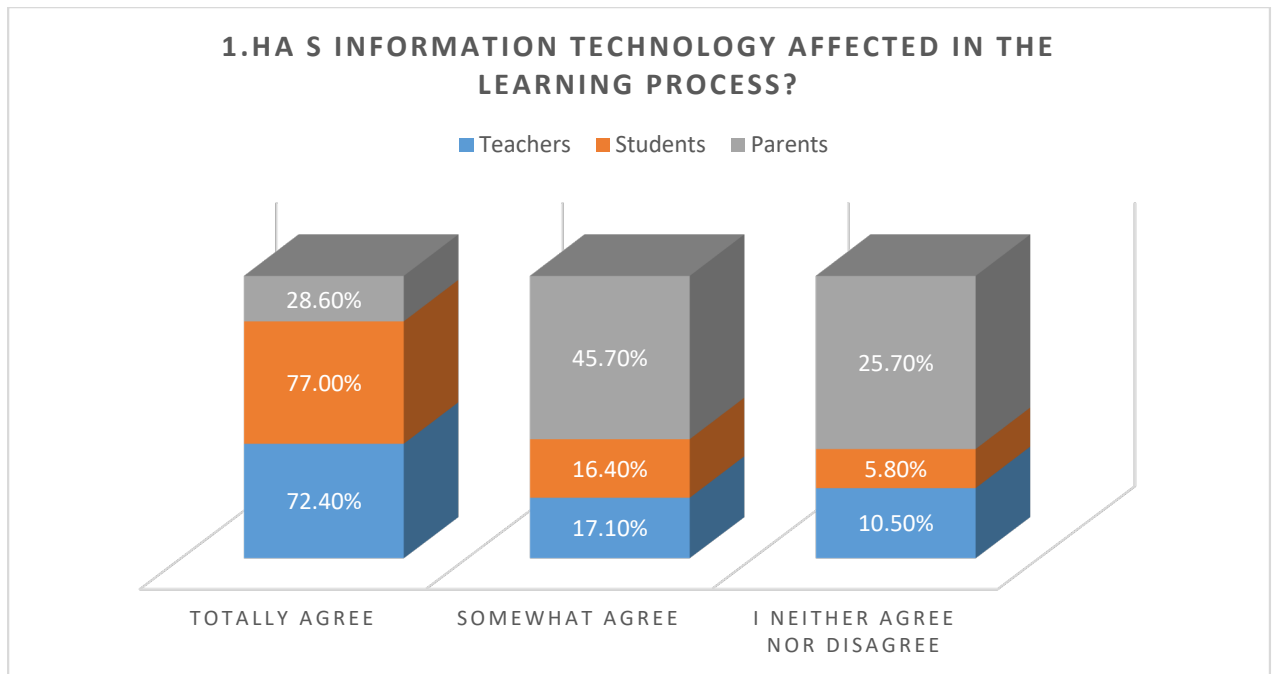
The integration of ICT into teaching and learning has become the most revolutionary force in this present era of education. It opens up new horizons for innovative learning and spreads access to education across borders.

Yet simultaneously, it also means the assumption of responsibilities concerning concerns on maintenance, equality of access, and technology use that would come into play regarding fairness and equity in education. Careful consideration and strategic planning will be required as we forge this electronic frontier if we are to take full advantage of technology's potential to improve education.

General results of the research

In graph 1, there is the question posed to teachers, students, and parents of vocational schools that "Has information technology affected the learning process?" Based on the data obtained from the survey, we came to this conclusion that 72.4% of teachers responded that ICT has influenced the teaching process and 17.1% of teachers answered that ICT has influenced the teaching process to some extent, while 10.5% of teachers neither agree nor disagree that ICT has influenced the learning process. 77% of students answered that ICT has influenced the learning process, while 16.4% of students answered that ICT somehow has an impact in this process, while 5.8% of students do not even agree that ICT has influenced the educational process. 28.6% of parents answered that ICT is very important. in vocational schools, while 45.7% answered that ICT has somehow influenced the learning process, while 5.8% of parents claimed that it has influenced the process to some extent.

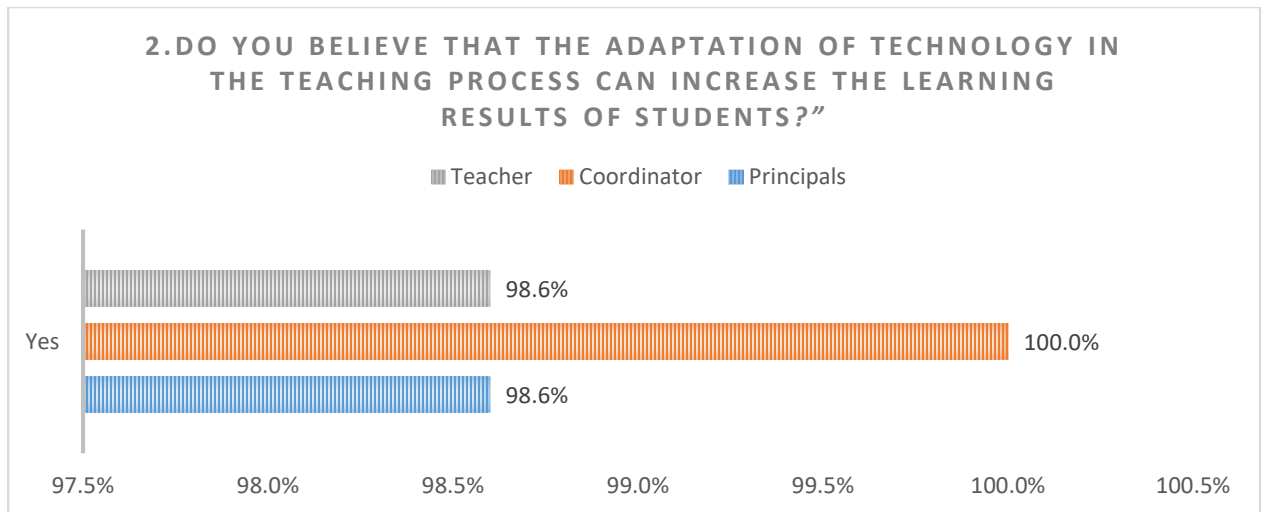
According to the results of the survey, the conclusion is that the respondents (teachers, students, and parents) estimate that ICT has an impact on the learning process, while parents, on the other hand, were more divided in their opinions, where some of them estimate that ICT has some impact on the learning process.



Graph 1. presents the results obtained from question 1, Questionnaire I., teachers, students and parents = 615 respondents in 7 (seven), vocational schools of the Municipality of Prishtina

In graph 2, there is the question posed to principals, coordinators, and teachers of vocational schools that **"Do you believe that the adaptation of technology in the teaching process can increase the learning results of students?"** Based on the data obtained from the survey, we came to this conclusion from the directors estimate that the adaptation of technology in the learning process can increase the learning results of students by 98.6%, while the coordinators estimate the results by 100%, and the teachers estimate that the adaptation of technology in the The teaching process increases the learning results of students by 98.6%.

According to the results, we conclude that the comparison of the data is that the use of technology in teaching can bring significant progress in the quality of teaching and learning in vocational schools. This can be considered an important indicator of the need to incorporate technology into the learning process in vocational schools.



Graph 2. presents the results obtained from question 2, Questionnaire II., principals , coordinators and teachers = 224 respondents in 7 (seven), vocational schools of the Municipality of Prishtina

In graph 3, there is the question posed to principals, coordinators, teachers, students, and parents of vocational schools, "Do you think that the use of ICT has had a positive effect on students' work with parents and teachers?"

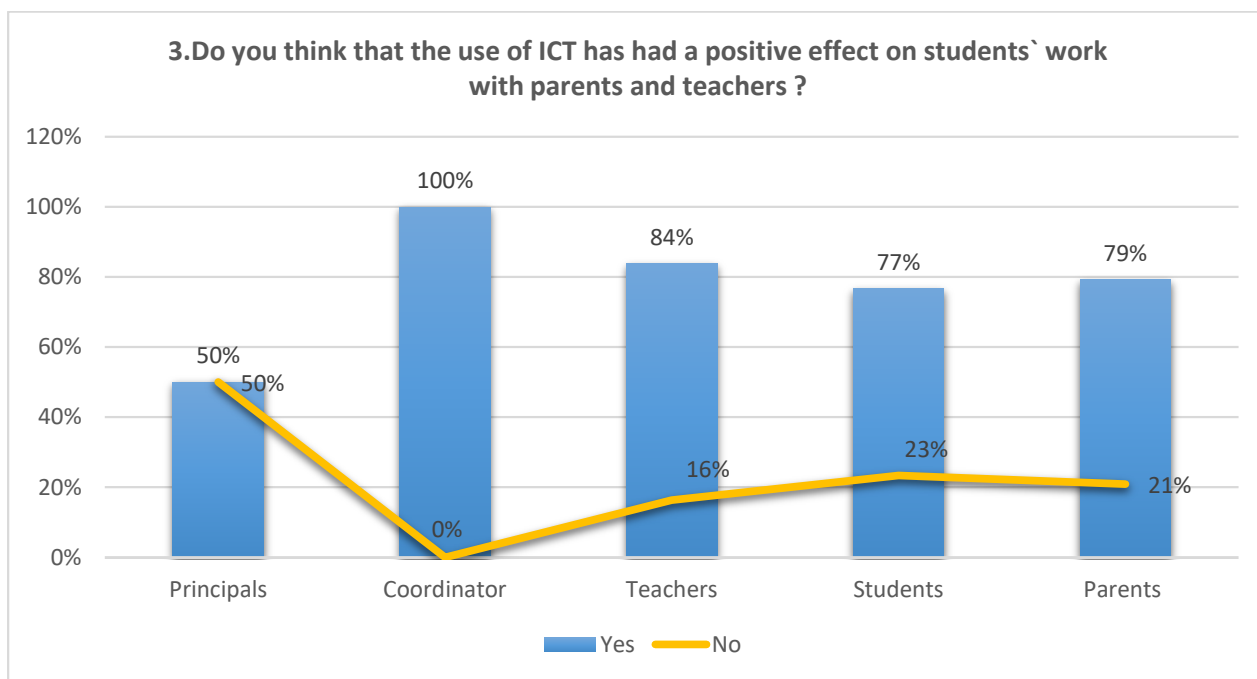
Based on the data obtained from the survey, we came to this conclusion from 50% of the principals who estimate that the use of ICT has had a positive impact on parents and teachers and 50% of them claim that ICT has not had a positive impact on students with parents and teachers, while 100% of the coordinators evaluate it as having had a positive impact on parents and teachers. 83.7% of the teachers estimate that it has had a positive impact on parents and teachers, while 16.3% of teachers don't have that estimate, while 76.6% of students estimate that it has had a positive impact on parents and teachers and 23.4% of students deny this impact. 79.1% of parents estimate that it has had a positive impact, and 20.9% of parents think that it has not had a positive impact on parents and teachers.

According to the results, we conclude that compared to principals and coordinators, the majority of teachers, students, and parents estimate that ICT has positively influenced the improvement of relations between students, parents, and teachers.

However, compared to principals and coordinators, some teachers state that they have not seen the positive impact of ICT on their relationships with parents and students. On the other hand,

the majority of students and parents have estimated that the use of ICT has had a positive impact on their relationships with teachers and the school.

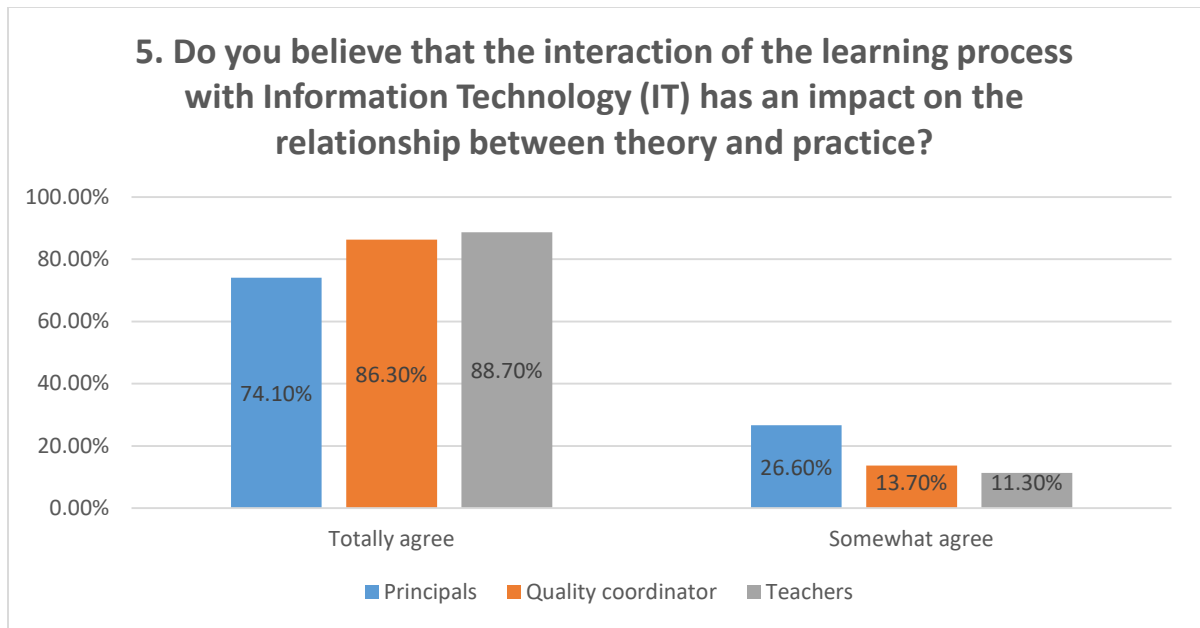
This can be considered as an indication that ICT can be an effective tool for improving the cooperation between the school, students, and parents at the vocational school level.



Graph 3. Presents the results obtained from question 3, Questionnaire II., principals, coordinators, teachers, students, parents = 638 respondents in 7 (seven), vocational schools of the Municipality of Pristina

Graph 4, from the question addressed to vocational school principals **"Do you believe that the interplay of the learning process and the interaction with Information Technology (IT) influences the relation between theory and practice?".** According to the results, most of the principals of vocational schools believe that interaction of the teaching process with IT influences the relation between theory and practice positively at these schools. In this direction, 71.4% of principals fully agree, while 28.6% agree partly. The coordinators responded to this question by indicating 86.3% as fully agreeing and 13.7% as somewhat agreeing, while the teachers answered by stating 88.7% as fully agreeing and 11.3% as somewhat agreeing.

It means that IT functions effectively for vocational students to make a theoretical-practice linkage in improving practical competence regarding field-related.



Graph 4. presents the obtained results from question 4, questionnaire I, principals , coordinators and teachers = 224 respondents in 7 (seven), vocational schools of the Municipality of Prishtina

Conclusion

In conclusion, information technology plays a profoundly important role in renovating teaching and learning in vocational education. It opens up new opportunities for students and teachers, making the process of teaching interactive and interesting. However, the use of technology should be objective and integrated into the teaching process in effective ways that are in line with the learning goals. Teachers also have to learn the use of technology in stimulating learning among students, updating their knowledge and skills. Care must be taken in order to achieve effective results in the enhancement of the teaching and learning process. The application of educational technology in vocational schools has contributed a great deal to new ways of teaching and learning. Information technology in vocational schools provides an interactive and personalized environment for students by enhancing their learning experience and capacity.

It would require teachers not only to learn how to use technology but also to be motivated toward continuous professional development. Meanwhile, institutions of education should invest in those resources and tools that could help promote effective integration of technology in teaching and learning. In general, integration of technology in the process of teaching and learning is required for the

purpose of preparing students for the future technological world and for expanding the possibilities of learning. The process of teaching and learning with information technology is the area of development considered to be of most importance in education. Information technology used in the classroom helps in solving the problems faced during teaching and enhancing the process of learning. Moreover, it develops the students' critical competencies and prepares them to surmount the challenges of the modern world by offering them a more interactive and dynamic learning environment. However, for this to be done effectively, it is necessary that teachers be qualified with technological training and equipped with the right tools to make information technology useful for the students and the teaching process.

It is from here that information technology became the transforming agent for vocational education and came with a load of opportunities both for the students and for teachers. This has infused learning with much interaction in the teaching process and has consequently increased educational results. In fact, to be effective with technology, it must be done consciously and objectively while combined with learning objectives. Where information technology can enhance teaching and learning, it has to be judiciously applied for effective results.

Educational technology has transformed the style of teaching and learning in vocational schools: students experience learning in a more personalized and dynamic environment. Therefore, for the complete realization of the potential for technology in education, teachers have to be suitably trained and supported for continuing professional development. The educational institution should also put in place whatever resources and equipment are needed for effective integration of technology in the learning process. All in all, incorporation of technology into teaching and learning is what will prepare the learners for a future driven by technology, as well as expand the opportunities for learning. It is one of the most important emerging areas in educational development.

Using information technology in the classroom not only helps to solve teaching issues but also improves the learning process, developing in pupils vital abilities and preparing them to meet the demands of the contemporary globe. Still, for this change to work, teachers need to be sufficiently trained and equipped to guarantee that information technology is deployed in ways that really help both students and the teaching process.

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