The Impact of Information Technology on Innovative Teaching Process and Its Influences on Human Resource Management: An Analytical Perspective

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Abstract

This study was based on the theory advanced by Oliver, Osa, and Walker (2012), who declared that teacher training must aim for effective integration of classroom technology, which, though not the end goal of education, is a means by which it can be accomplished. Educational technology has gained popularity in classroom instruction, with information technology as one of its aspects. Educational technology is the study and careful practice of facilitating learning through the creation, usage, and management of appropriate hardware and software. Educational technology includes the theory and practice of designing, developing, using, managing, and evaluating the various processes and resources for learning.

Aware of this desirable change in the field of education, the researchers inquired into the impact of information technology on the use of innovative pedagogical strategies. At the same time, the researchers are interested in determining how the use of innovative teaching through information technology has influenced human resources management in educational institutions, specifically in the Higher Education. These areas of research have motivated the researchers to conduct this study.

Keywords: Information Technology, Innovative Teaching Process, Human Resource Management, IT, HR

1.   Introduction

Information technology is changing how teachers impart their lessons and how the students imbibe whatever their teachers are teaching. In the past, the chalkboard was sufficient as an illustrative tool by which the teachers could make their students understand the subject matter. Information technology has become necessary for both teachers and students. With the knowledge that teaching strategies are becoming more sophisticated, administrators now realize that educational institutions should bear the cost of information technology. School administrators now acknowledge that although information technology is costly, it is outweighed by the students' benefits from its use.

The teachers can provide illustrations, charts, and graphs to students with ease and speed through information technology. They can use flipped learning, in which the students are given assignments for independent learning and report to class with their exposition of the lessons. Schools may no longer need physical classrooms but virtual classrooms because the students can learn anywhere online. Distance learning becomes facilitated because of information technology. Examinations are also facilitated because students can also take their examinations online.

This revolutionary aspect of teaching and learning has changed how school administrators recruit and select their human resources. The school administrators are no longer interested in recruiting

support services personnel who can write shorthand notes to be transcribed later. Administrators do not test the new teachers' ability to construct visual aids or draw maps, graphs, and charts. Instead, administrators need support personnel and faculty members who are computer literate. Applicants for teaching positions who are well-versed in information technology are now given priority in the recruitment process.

Aware of this desirable change in education, the researcher inquiries into the impact of information technology on the use of innovative pedagogical strategies. At the same time, the researcher is interested in determining how innovative teaching through information technology has influenced human resources management in educational institutions. These areas of research have motivated the researcher to conduct this study.

Problem Statement

This study aimed to determine the impact of information technology on innovative processes in teaching and its influence on human resource management in Education in Higher Educational Institutions. Specifically, this study seeks to ascertain the answers to the following research questions.

1. How intense is the impact of information technology on innovative teaching processes in the HEIs in the following aspects:

    1.1.   Administrative practices;

    1.2.   Instructional process; and

    1.3.   Students' learning experience?

2. To What Extent has the use of informative technology in teaching influenced human resource management practices in the HEIs in the following aspects:

    2.1.   Recruitment of teachers and other school staff;

    2.2.   Selection of teachers and other school staff; and

    2.3.   Training and development of teachers and other school staff?

3. How may the use of information technology in innovative teaching processes be enhanced?

Conceptual Framework

In the conduct of this study, attention is focused on two dimensions—first, the impact of information technology on the innovative teaching process, and second, the influence of information technology on human resource management in education. The variables within each dimension comprise the details of the research process.

In the first dimension, which is the impact of technology on the innovative teaching process, the study determines the strength of the effect of information technology on the practices of the school administration, the instructional process, and the students' learning experience. The inquiry into the three aspects of academic activity renders the study graphic and understandable.

In the second dimension, which is the influence of information technology on human resource management in education, the researcher focuses on the areas of recruitment, selection, and training and development of teachers and other school staff. In these processes, the researcher

determines how the benefits of information technology condition human resource management in education. From the study results, the researcher will present proposals for enhancement.

THE HEIs SYSTEM

IMPACT OF INFORMATION TECHNOLOGY ON THE INNOVATIVE TEACHING PROCESS

*On the Administrative Practices
*On the Instructional Process
*On the Students' Learning Experience

INFLUENCES OF INFORMATION TECHNOLOGY IN HRM IN EDUCATION

*Recruitment of Teachers and Other School Staff
*Selection of Teachers and Other School Staff
*Training and Development of Teachers and Other School Staff
*Proactive Upgrading
*Consultancy Services

PROPOSALS FOR ENHANCEMENT

Theoretical Background

This study is based on the theory advanced by Oliver, Osa, and Walker (2012), who declared that teacher training must aim for effective integration of classroom technology, which, though not the end goal of education, is a means by which it can be accomplished. Educational technology has gained popularity in classroom instruction, with information technology as one of its aspects.

2. Literature Review

Nowadays, society fully utilizes modern electronic technology (Selwyn, 2011). Educational technology includes e-learning, instructional technology, information and communication technology, multimedia learning, technology-enhanced learning, computer-based instruction, computer-managed instruction, computer-based learning, computer-aided instruction, online education, and virtual learning environments, among many other types of educational technology. Ramey (2012) theorized that new technologies change how students learn and achieve specific academic goals. However, a constant challenge about the use of educational psychology poses itself in the efforts to promote understanding among the students. Technology is expensive and therefore generates difficulties for those who cannot afford the necessary hardware and software. Besides, the expense of having an internet connection may make it difficult for students to have online education. Still, schools have to use educational technology to accelerate learning among students. With the popularity of smartphones, online teaching and learning can now be facilitated.

Developers of applications have installed educational features which teachers and students in the classroom can use. Teachers can use collaborative learning through mobile phones, a group-based approach for coordinating students to achieve a learning task. Many mobile devices can be used for e-learning.(Kopashnikova & Bartolic, 2019).

A virtual learning environment is a Web-based platform for digital learning in educational institutions. It consists of resources, activities, and interactions within a particular course structure, usually with provisions for different stages of assessment (Weller, 2007).

Information technology has a significant impact on education, specifically on the administrative process, the teaching activity, and the learning experience (Eduroute, 2019). Information technology has changed how the school plant may be structured as far as the administrative process is concerned. It is no longer necessary for the school to have much space to store learning devices. With the use of maps, charts, projectors, and stands being phased out, the school's instructional media center may have a compact arrangement. At the same time, the structure of the library also changes because the collection of volumes of books may no longer be necessary.

Information technology also has a significant impact on the teaching process. Teachers at this time need to have computer skills to teach their students well. They have to provide the students with knowledge of how and where to access information to ensure they are on the same subject matter. Teachers have to analyze the content of the available information online to determine the reliability of the sources that the students are using (McCoy, 2019).

Information technology has a significant impact on students. Technological aids help the students in the sense that they promote self-reliance and independent learning. Students can learn their lessons without the assistants of parents and teachers. The speed with which the students can access information in volumes is a great help. Computer-based lessons promote cooperative learning among the students, especially in their efforts to search for educational material as references to fulfill their assignments. They can engage in multiple searches for references without being limited by the school library's collection. They will acquire better writing skills because of their opportunities to compose their answers to their assignments (Bhakta & Dutta, 2016).

To develop employees who have opportunities for promotion, information technology facilitates reviewing the employees' performance and capabilities to meet organization goals and expectations over a specific period. At the same time, the employees concerned can track their career path and accomplish measures using which they can develop their careers. Information technology is advantageous in this dimension of human resource management because when the employees' data are entered into the system database, future retrieval is facilitated. This practice leads to cost-saving on an otherwise voluminous paper-based filing system (Niaz, 2017).

On the part of the employee, information technology leads to the building of an empowered workforce. Employees who need to know their performance ratings and their status as employees can refer to the company database. Their feedback on their performance provided by the company's database can motivate them toward better performance and job satisfaction. Moreover, the employees can trace the match between goals and expectations and their performance levels. At this juncture, information technology serves as a pipeline between personal policy and personal processes in the organization (Niaz, 2017)

3.   Research Methodology

This study utilizes the descriptive-survey method, which studies the prevailing situation. The researcher-made questionnaire is used as the main instrument of data collection.

Respondents of the Study

The respondents of this study are 70 faculty members of the different HEIs in the UAE. They are chosen through purposive sampling. The parameters used in the selection of respondents are the following: (1) The faculty members should be teaching in the male sections of the college; (2) They should have been teaching in the HEI for at least three years; and (3) They have been using computer-aided instruction during the three years in which they were serving the HEI.

4.   Presentation, Analysis, and Interpretation of Data

Pertaining to the Administrative Process

Reducing expenditures on library print and non-print materials, increasing the number of classrooms in place of a spacious library building, being able to acquire more computer units for the use of the students, and promoting the use of flipped learning among the faculty have the most significant impact to the school administration.

The activities and operations such as being able to construct more function rooms for students instead of using rooms to store obsolete instructional materials and having more funds for the training of teachers in the use of computer-aided teaching strategies have mean results that are both described as moderate. This implies that several school administrators are discrete in providing functional rooms for students and allocating funds for teachers' training on IT-based teaching strategies. This finding can be understood in the context where schools now have virtual spaces for students, resulting in less demand for physical rooms. On the other hand, teachers now have vast opportunities to attend online IT training without a cost. Thus, lesser funding allocation is needed for their training.

Table 1: Impact of Information Technology Pertaining on the Administrative Practices

Activities and Operations	Mean	Descriptive Value
We are reducing expenditures on library print and non-print materials.	4.11	Advanced
Increasing the number of classrooms in place of a spacious library building	3.58	Advanced
Being able to construct more function rooms for students instead of using rooms for the storage of obsolete instructional materials	3.42	Moderate
Being able to acquire more computer units for the use of the students	3.68	Advanced
Having more funds for the training of teachers in the use of computer-aided teaching strategies	3.37	Moderate
Promoting the use of flipped learning among the faculty	3.84	Advanced
Overall Mean	**3.67**	**Advanced**

It shows that the activities such as being able to assign tasks and assignments to students via electronic mail and transmitting information and assignments at any given time of day have both mean results of 4.53, which is described as the maximum. This finding suggests that schools have

already shifted from the traditional eight-to-five school timing into flexible 24/7 timing in communicating to the students.

The activities and operations such as providing visual and auditory learning experiences to the students even without their physical presence, increasing the number of classrooms in place of a spacious library building, being able to acquire more computer units for the use of the students, and promoting the use of flipped learning among the faculty have mean results which are described as advanced. This implies that schools heavily utilize IT in the teaching-learning process. This can be justified by the study conducted by Ghavifekr et al. (2015), which asserts that students are already adept with technology. They will learn better within the technology-based environment. The issue of IT integration in schools, specifically in the classroom, is vital.

Table 2: Impact of Information Technology Pertaining on the Instructional Process

Activities and Operations	Mean	Descriptive Value
Providing visual and auditory learning experiences to the students even without their physical presence	4.26	Advanced
Being able to assign tasks and assignments to students via electronic mail	4.53	Maximum
Being able to transfer and distribute information through either computers or cell phones	4.47	Advanced
Transmitting information and assignments at any given time of the day	4.53	Maximum
Facilitating the sharing of information among students from different schools	4.05	Advanced
Promoting a better understanding of complex concepts and theories through computer visuals and auditory illustrations	3.84	Advanced
Overall Mean	**4.28**	**Advanced**

The seven activities and operations namely being able to access various learning materials within a short time, being able to comply with assignments through a paperless medium, engaging in recitation without being physically present in the classroom, being able to engage in discussions with other students on either an inter-institutional or global level, being able to attend lectures without being necessarily being physically present in the classroom, and being able to access various types of visual and auditory illustrations at any time of the day have an overall mean of 4.04 (Advanced). This implies that IT plays a significant role in the students' learning process. Students utilize IT to virtually participate in classes, whether local or remote, from anywhere traditional learning setup could hardly provide. With this finding, Mccoy(2020) asserted that virtual classrooms and other technology tools could make the class more lively. They can also create more inclusive learning environments that foster collaboration and curiosity and enable teachers to collect data on student performance.

Table 3: Impact of Information Technology Pertaining on the Students' Learning Experience

Activities and Operations	Mean	Descriptive Value
Being able to access various learning materials within a short time	4.11	Advanced
Being able to comply with assignments through a paperless medium	4.47	Advanced
Engaging in recitation without being physically present in the classroom	3.63	Advanced
Being able to engage in discussions with other students on either an inter-institutional or global level	3.68	Advanced
Being able to attend lectures without being necessarily being physically present in the classroom	4.16	Advanced
Being able to access various types of visual and auditory illustrations at any time of the day	4.21	Advanced
Overall Mean	**4.04**	**Advanced**

Academic institutions consider IT an essential driver to facilitate administrative operations, enhance the instructional process, and enrich students' learning experience. Explorance(2022), in its online article, argued that when students are provided with a grounding of IT as a learning tool, this enriches their future learning potential. Furthermore, it concluded that technology allows educators to remove the physical barriers of the classroom, offering students a way to connect the curriculum with the natural world, and those areas of academic focus can genuinely enrich the student experience.

The extent to which the Information Technology has influenced the Recruitment of Teachers and Other School Staff

Table 5: The Extent to which the Information Technology has Influenced the Following Practices in the Recruitment of Teachers and Other School Staff

Activities and Operations	Mean	Descriptive Value
Advertising vacancies in teaching and non-teaching positions through social media	4.05	Great Extent
Posting qualification requirements for teaching and non-teaching positions through social media and the Internet	4.05	Great Extent
Posting vacancies in various positions on social media	4.11	Great Extent
Uploading the vision, mission, goals, and objectives of the institution on the Internet	4.11	Great Extent
Uploading the core competencies and the organizational structure of the institution on the Internet	3.84	Great Extent
Providing information on social media about the procedures for sending applications to the institution	3.68	Great Extent
Overall Mean	**3.97**	**Great Extent**

Generally, academic institutions use information technology to recruit teachers and other school staff to a great extent. Posting vacancies in various positions on social media and uploading the institution's vision, mission, goals, and objectives on the Internet got the highest score. This

reveals that social media allows recruiters to spread information about job vacancies so that passive and active candidates receive such messages.

The extent to which the Information Technology has influenced the Selection of Teachers and School Staff from Among the Number of Applicants

Table 6: Extent to which the Information Technology has Influenced the Following Practices in the Selection of Teachers and School Staff from Among the Number of Applicants

Activities and Operations	Mean	Descriptive Value
Sending selection tests to the applicants through electronic mail	3.42	Moderate Extent
Providing the applicants' references with a recommendation and reference forms through electronic mail	3.68	Great Extent
Requiring applicants to send entry plans through electronic mail	3.68	Great Extent
Requiring applicants to send their curriculum vitae through electronic mail	4.05	Great Extent
Requiring applicants to create visual illustrations of any type of academic subject matter with the use of various computer applications in making graphs, pie charts, and animation	3.79	Great Extent
Requiring applicants to illustrate through various computer applications how they can win the "war of talents" in employee selection	3.74	Great Extent
Overall Mean	**3.73**	**Great Extent**

Specifically, to a moderate extent, academic institutions send selection tests to the applicants through electronic email. This reveals that an in-depth assessment is necessary to ensure the applicant has the required skills and competencies to perform the job. However, to a great extent, providing the applicants' references with a recommendation and reference forms through electronic mail is observed. Requiring applicants to send their curriculum vitae through electronic mail got the highest score of 4.05, meaning organizations nowadays in many industries require applicants to submit applications by email.

From these findings, it could be inferred that, to a great extent, the academic institutions adopted good practices in selecting teachers and school staff from among the applicants.

The extent to which the Information Technology has Influenced the Selection of Teachers and School Staff from Among the Number of Applicants

Table 7: Extent to which the Information Technology has Influenced the Following Practices in the Training and Development of Teachers and Other School Staff

Activities and Operations	Mean	Descriptive Value
Conducting an online assessment of the teachers and school staff's training and development needs	3.79	Great Extent

Keeping a record of technology-based illustrations of the trends in the training and development needs of teachers and other school staff	3.89	Great Extent
Storing in the institutional database the individual records of the training and development needs of teachers and other school staff	4.05	Great Extent
Storing in the institutional database individual records of the teachers and other school staff's personal goals toward attaining the strategic objectives of the institution	3.95	Great Extent
Keeping electronic records of the teachers and other school staff's performance evaluation results	4.21	Great Extent
Soliciting from the teachers and other school staff an electronic illustration of the visualization of their career path	3.63	Great Extent
Overall Mean	**3.92**	**Great Extent**

Generally, to a great extent, information technology has influenced the training and development practices of teachers and other school staff. Keeping electronic records of the teachers and other school staff's performance evaluation results got the highest score. Anido (2009) discussed that many firms could improve their products and services because of the rapid innovation and growth of the Internet and network technology. Technology can be used to evaluate academics in a variety of ways. Although students' online evaluation of instruction is merely a more efficient way of conducting business, it allows supervisors to encourage and monitor more regular and unwanted input. The practice of requesting an electronic illustration of the visualization of a student's career path from instructors and other school personnel received the lowest score. Cortez (2021) stated that we occasionally have the opportunity to share our professional journeys with various audiences in our professional lives.

Proposals for the Enhancement of the Use of Information Technology in Innovative Teaching Processes

Rationale

Information technology alters how teachers deliver courses and how pupils absorb what they are taught. The chalkboard was a sufficient demonstrative tool for teachers to ensure their students understood the subject matter. Both teachers and students now require information technology. Administrators increasingly recognize that educational institutions should shoulder the cost of information technology since teaching tactics are growing more advanced. Although the use of information technology is costly, school administrators now recognize that the advantages to kids outweigh the costs.

These proposals aim to enhance information technology in innovative teaching processes.

In presenting the proposals, the researchers construct a matrix that shows the areas of concern. The first column shows the activities and operations, and the second column shows the strategies that can be used for innovative teaching:

Activities or Operation	Proposals for Enhancement
Introduction of Innovative Learning Process	1. Provide additional funding for teacher training in the use of computer-assisted teaching practices. 2. Build more function spaces for students rather than rooms to store obsolete teaching materials. 3. Purchase more computer devices for student use.
Teaching Practices	1. Use computer images and auditory illustrations to help students learn challenging topics and theories. 2. Make it easier for students from various schools to share information. 3. Provide students with visual and aural learning experiences even if they are not physically present.
Students' Learning Experience	1. Take part in recitation without physically being present in the classroom 2. Participate in inter-institutional or worldwide discussions with other students. 3. Access a variety of learning materials in a short period.

5. Findings, Conclusion, and Recommendations

Findings

The study revealed that information technology has an intense favorable effect on introducing innovative learning processes regarding administrative practices, teaching processes, and the students' learning experiences.

Regarding the influence of information technology on human resources, the data revealed that teachers and other staff recruitment were the superior results. The academic institutions used, to a great extent, information technology in the majority of practices in connection with human resource management in terms of recruitment of teachers and other school staff, selection of teachers and school staff from among the number of applicants; and training and development of teachers and other school staff of the institution.

Conclusion

In the context of the findings of the study, the researchers conclude that the use of information technology has an impact on innovative learning processes. It improves the efficiency and effectiveness of the educational process.

Technological advancements significantly impact an organization's human resources management of the academic institutions since it enables them to strengthen their overall organizational structure.

Recommendations

From the findings of the study, the following are the recommendations:

1. Technology can boost worker efficiency in administrative jobs by automating repetitive portions of complex operations or increasing system communication. Technology integration in the classroom can aid in the achievement of crucial educational objectives.

2. Prepares students with modern technology skills and competencies for the twenty-first-century workforce.

3. Make digital materials available since they increase the learning process and are more familiar with multimedia content among today's pupils. Students respond strongly to content given in a modern, interactive manner, resulting in a complete learning experience with fewer difficulties.

They should increase their use of ICT for staff recruiting and be willing to invest in ICT tools and skills. Purchase of appropriate facilities and software are examples of such instruments, while training and development processes must ensure that ICT skills and knowledge are adequately addressed. As emerging technologies arise, it's also necessary to keep up with such tools and expertise. They must be aware of Internet access and competence levels among target groups and stakeholders in the hiring, selection, and placement of employees.

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