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A Study On Efficacy And Digital Teaching And Its Impact On Academic Performance With Reference To Engineering Courses.

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ABSTRACT

Digital learning is one of the most powerful change that is revolutionized the Education. It has Enabled today's learning to be more knowledge seekers. Digital tools were once used to promote products ,but today it has gone far beyond in leverage Essential knowledge systems. Especially in institutes and higher learning digital platform leverage knowledge system is creative and exchanging and Intellect. Digital learning is facilitating students to capitalize time, place and place. It allows to use wide range of practices in virtual learning in Higher Educational Institutes.

Keywords: Digital learning ,knowledge needs,virtual tools.

Introduction:

Digital Learning has attracted the attention of many Academics. Virtual tools helps learners to develop skills and ability to apply knowlegde learned in online Education. It helps to make the communication skills even though challenges were thrown open like lack of availability of buy gadgets,affordability ,access. Yet this Digital learning was one of the major influences in learning.Digital teaching showed a new formalized learning Envirnanments which was different from the past trends.Students are using these tools to enrich their practical knowledge.The industry 4.0 technologies help develop the focus of learning in higher educational institute.

Transformation are needed by higher educational institutes to educate them to digital tranformational learning environment.This has attracted the attention recently by many other disciplines in transformation and implementation process and to meet the different heads of the learners.Digital learning is learning facilitated by technology that gives students same element of control over time,place,path or pace.Digital content in the high quality and academic material which is delivered through technology.It is what students learn.It range from engaging to interactive and adaptive ways to seeking response.It engages the student centric learning environment when knowledge can be generated and dissemented .the covid 19 pandemic has thrown open new challenges and innovative solutions to enable learning in a new way student have adapted to new types of learning environments.As a result ,education has changed dramatically with the distinctive raise of digital learning,where by the teaching is under taken remotely and an digital platform.Digital learning increases the relation of information and fallen ten time to convey the information.the concept of classroom has changed remarkably for a higher educational student.Covering remote insularity and integration in knowledge management system.Teaching and learning process can be defined as a tranformation process of knowledge from teachers to students.

The benefits of Digital Learning from the view point of learners:

Access to information- Technology provides students with access to information which can help them make informed decision.

Serial opportunities-Digital learning allows students to connect with others online , even if they are not in same location.

Critical thinking-AI tools like chatgpt can help students develop critical thinking and analytical skills.

For Teachers or Instructors Digital Learning:

Adjusted Teaching:Teachers can use data collected from students to adjust their teaching to address student strength and weakness.Improve the learning experience instructors can be sensitive to inclusion concern and provide additional support to the students who may need it.

How influential in digital learning to students:

students can have oraganised listening when accompanied with digital learning tools.In a classroom there are several misconception has to how effective it can be student engagement and course evaluation are vital in improving the education experience.Integrating technology tools students of proffessional courses like enginnering have access to data can view stimulation models.More kindly and acquire skills that are crucial for informed decision to make.

In the fast moving global changes education is one of the important sector which has been seeing phenomenol changes. The potential of edu sector has emmensoly grown meeting the needs of both rural and urban locations. The initiatives given by both center and as well as state government are widening the infrastucture of education.

Digital learning allows the learner to seek information at any time and at any place. These initiatives at HEI are bringing in transformation from production based to knowledge base.

Objectives of the study:

1. This study analyses the relevance of digital learning in professional education.
2. To examine the outcomes of digital learning and implication on the student.
3. To study technology scapes and identify the learner as input in teaching, learning process
4. To study the learner needs in technology front and help develop learning process.

Objective 1: Analyze the Relevance of Digital Learning in Professional Education

This objective focuses on understanding the role and importance of digital learning tools, platforms, and methods in professional education. With the rise of technologies such as Learning Management Systems (LMS), virtual classrooms, and adaptive learning technologies, digital learning has transformed traditional education. It enables students to access resources at their own pace and provides flexibility, particularly in professional fields that require specialized skills. This objective will explore how digital learning aligns with industry demands, supports upskilling, and bridges the gap between theoretical knowledge and practical applications. Furthermore, the analysis will consider how digital learning fosters collaboration among students, educators, and industry professionals. By investigating the effectiveness of digital tools, this study will highlight their role in enhancing learning outcomes, especially in rapidly changing professional domains like healthcare, IT, and business management.

Objective 2: Examine the Outcomes of Digital Learning and Implications on Students

This objective aims to evaluate the measurable impacts of digital learning on students' academic performance, skill development, and employability. It includes assessing how digital tools like simulations, video tutorials, and gamification improve knowledge retention, critical thinking, and problem-solving skills. The study will also examine challenges, such as digital fatigue and accessibility issues, which might hinder learning. By analyzing feedback from students and educators, this objective will identify whether digital learning environments foster engagement and inclusivity. It also aims to understand how students perceive the value of digital learning in terms of career readiness. The implications of digital learning extend to soft skills such as self-regulation and adaptability, which are crucial in professional settings. The study will thus contribute to designing strategies to optimize digital learning for better student outcomes.

Objective 3: Study Technology Scapes and Identify the Learner as Input in the Teaching-Learning Process

This objective examines the technological landscape (technoscapes) to understand its influence on educational methodologies and student engagement. By identifying the learner as an active participant rather than a passive recipient, this study emphasizes co-creation in the teaching-learning process. The role of technologies such as artificial intelligence, virtual reality, and data analytics will be explored in tailoring educational content to meet diverse learner needs. This involves studying how students interact with technologies and the effectiveness of such tools in accommodating various learning styles. By treating learners as critical inputs, this objective promotes a feedback-oriented teaching approach that continuously adapts to technological advancements and student expectations. Insights gained will inform the integration of dynamic, learner-centered teaching models that foster a more personalized, interactive, and effective educational experience.

Objective 4: Study Learner Needs in Technology and Help Develop Learning Processes

This objective focuses on identifying gaps in current educational technologies to meet the evolving needs of learners. It explores students' expectations, preferences, and challenges with digital learning environments to ensure technology-enhanced education remains relevant and effective. The study will assess key areas such as accessibility, user-friendliness, and inclusivity of digital tools. Additionally, it will examine how emerging trends like mobile learning, AI tutors, and blockchain for credentialing can support learners' academic and professional goals. By understanding these needs, the objective aims to develop innovative teaching and learning processes that align with global standards and trends. Furthermore, it emphasizes continuous improvement in digital tools and strategies to enhance engagement, inclusivity, and learning outcomes, ensuring that education systems remain agile in the face of technological evolution.

Perception of students in HEI's towards digital learning tools / environment-

- Feel like more interesting to focus on the concepts that are demonstrated on digital platform
- It inculcates the spirit of thinking , feeling and doing th learning outcomes
- It facilitates to retrieve the concepts whenever they want to retrieve
- Digital learning allows to take instructions in a more personalized process.It touches the sensory , simulate which allows focused learning.
- Student can avail the information through google meet or webex at any place and time.It is opening new horizon in harnessing knowledge.
- It allows the student to share their valuable understandings properties among classmates,peer , teachers or research agencies.
- It allows the student to train and develop his skills and knowledge according to industry requirements.

Student active involvement in digital learning is highly solicited. The young minds are intellectual source to design and development of solutions to intricate problems existing in the content learning. Exclusively in view of Entrepreneurial skill training digital learning with practical problem case studies and illustration give tutoring through digital boards explain the advocacy of entrepreneurial development. Similarly when exposed to practical environment to study the establishment of small ventures these methods help learners acquaint with the zeal to learn and attain the desired skill development which is essentially the causes outcomes.

The digital learning platform like google classroom, webex platform, zoom, microsoft teams enabled learners experience a more personalized learning experience which ultimately brought in positive results. Digital learning can also supplement the requirements of specially challenged students Institutions. Virtual education is possible only through technology aided teaching and learning which helps in promoting education into different parts of the country. Some platforms include ICT casteur, swayam, E pathasala, CEC (consortium for educational communication). etc. learners have learning needs which can be clearly transmitted through the virtual teaching tools and smartboards. Learners are to be acknowledged an input source in the process of teaching analysing problem, seeking novel answers, retention of information etc.

Conclusion

In conclusion, the study underscores the transformative potential of digital learning in professional education by highlighting its relevance, outcomes, and adaptability to evolving learner needs. Digital tools and platforms have redefined teaching and learning processes, fostering flexibility, accessibility, and alignment with industry demands. By examining the implications of digital learning on students, the research demonstrates its role in enhancing academic performance, skill development, and employability, while addressing challenges like digital fatigue and inclusivity. Additionally, identifying the learner as an active participant within the technological landscape emphasizes the importance of co-creation and feedback-oriented strategies in education. Understanding and addressing learners' technological needs further ensures the development of innovative, inclusive, and effective learning processes. Ultimately, this study advocates for a learner-centered approach, integrating advanced technologies to create dynamic educational experiences that prepare students for professional success in an increasingly digital world.

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