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Shweta Verma
Assistant Professor, Asian Educational Institute, Punjab, India

Correspondence
Shweta Verma
Assistant Professor, Asian Educational Institute, Punjab, India

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Embracing digitalization: Student learning and new technologies

Shweta Verma

Abstract
Digital change is like a fast-moving tsunami, with the digitalization of many business practices creating new relationships between businesses and customers and altering the marketing landscape. It is imperative that college students gain exposure to such cutting-edge technologies and ingrain the conceptual, inquiry, critical thinking, creativity, and integrative learning skills needed to add value in a world where machines will work alongside human professionals. We suggest that by embracing rather than banning technology, faculty enfranchise students through increased sensory experiences and enhanced digital activities, which will lead to greater learning. We contend that vested stakeholders-institutions of higher education, professional associations, publishing companies, and technology companies-need to support and strengthen faculty efforts in embracing technology to continuously enhance learning.

Keywords: bandwagon, AI, entrepreneurs, e-learning, blended learning, ICT, stakeholders.

Introduction
Digitalization in Educational Sector Computer based technologies are normally used at the current education sector which help the students and teachers to communicate and share information digitally. Word Processing software like Microsoft Word and spread sheets like Microsoft Excel helps students immensely in creating instant documents and solving problems. Spelling checkers, dictionaries and readymade computer programs are available nowadays for corrections and calculations.

"Technology doesn't aim to replace teachers, only to complement them."

Definition: There is a paradigm shift underway in the education industry as traditional methods of teaching are being challenged by a new breed of edtech entrepreneurs, with e-learning in particular radically changing the future of how education is resourced, taught and consumed. This shift is partly the result of digitalization – just as we've seen in other industries such as media and entertainment – and partly a response to the current skyrocketing costs of education and the accompanying inefficiencies.

Learning and Teaching
In recent decades, progress towards quality education has been made through the implementation of structural reforms. However, there is still a need to be more attentive to the process of learning and teaching itself. Universities must drive developments in learning and teaching and this requires close collaboration with all major stakeholder groups, including national and European policy makers.

Objectives for teachers

Teachers have high levels of digital and pedagogical skills (knowledge of how to use digital tools to promote learning in their subjects), incentives for the academic/pedagogical development of their own teaching, and access to collegial communities and support services for the development of study programmes and to share digital learning resources.

Teachers have a wide range of applications and digital tools and services that support the implementation of education, from planning, through teaching itself and interaction with students and colleagues both internally and externally, to the follow-up and evaluation of students at individual and group levels.

Teachers have the opportunity to receive remuneration (in the form of promotion, qualification, salary) or time to pursue the development of education activities on the basis of documented results in the field of education.

Objectives for students

Students are admitted into an academic community of staff and fellow students in which digital opportunities are exploited as part of active and varied learning and assessment methods, that result in the best possible learning outcomes and provide students with the academic and digital qualifications that they shall acquire within their programmes of study.

Students can participate in research projects (research-based teaching) and are trained in the use of research tools in order for them to be able to participate in and directly contribute to the research.

Students are given the opportunity to develop their digital skills, and they are trained in the use of technology that promotes learning and generic skills and makes them aware of the ethical, legal, and security issues that arise through the use of data and digital technology.

Students have access to a modern, personal learning environment that facilitates individual learning arrangements, efficiency, interaction, and flexibility in their studies.

Primary goals

The currently applicable sect oral goals for research and higher education, as determined in the annual budget proposition to the Sorting Proposition 1 S, will always be the primary goals for digitalization and ICT in the higher education sector:

High quality in education and research

Research and education for welfare, value creation, and adaptation

Good access to education

An efficient, diverse, and robust higher education sector and research system

Digitalization and ICT in the higher education sector must support these goals.

An efficient, diverse, and robust higher education sector

An efficient, diverse, and robust higher education sector and research system will help to achieve the first three goals for the higher education sector in the best possible way. Universities and university colleges manage a significant portion of community funds and must use these resources efficiently and for the benefit of society. The institutions shall develop their brands in line with their strengths and individuality and contribute to high quality and a differentiated sector. Furthermore, they shall meet the needs of society in a variety of areas and help Norway to assert itself internationally as an outstanding knowledge nation. Digitalization is a tool for making fundamental changes to the processes, content, and forms of work that can put the sector in a better position to achieve the goals of education and research: high quality and relevance, and access to education for all.

Good access to education

The government wants everyone to have access to higher education, regardless of their gender, ethnicity, or social, geographic, or economic background. Education should facilitate good access to labour and skills. Lifelong learning is important in order to help not only individuals but also society and the labour market at large to adapt and innovate. Digitalization expands the opportunities for access to education and for co-operation on the development of relevant courses. New and varied forms of teaching and learning are being used in regular campus-based courses by combining analogue and digital media (blended learning), and new models are being provided for purely online-based studies.

High quality in education and research

The government wants education and research environments to be of high quality, and for more education and research environments to climb global rankings. The quality report stresses the importance of exploiting digital opportunities so that all students can experience stimulating and varied learning and assessment methods. In addition to academically relevant digital skills, students shall acquire more general ICT skills and digital judgment that are relevant across disciplines. Digitalization makes it possible to conduct research more efficiently and to create new opportunities to develop methodologies, to co-operate, and for development within existing and new disciplines. In addition digitalization provides opportunities for sharing research data and results in new ways, while also presenting new challenges for researchers in relation to data security and correct data management.

Research and education for welfare, value creation, and adaptation

The government aims to make the education and research that interacts with the outside world and meets the needs of the labour market and society. The potential of digitalization is vital to conducting research more efficiently, to academic development and to the development of methodologies, and ICT solutions that facilitate seamless co-operation with stakeholders outside of the institutions both nationally and internationally.

Objectives for administrative systems

All services, information, and communication are digitally available as far as possible.

Needs, ease of use, and the user experience are key criteria in the realization of new solutions.

Administrative workflows and user interfaces are improved and streamlined through standardization and digitalization.

A shared system portfolio has been established to address transversal administrative needs (budget, accounting, payroll, procurement, etc.).

The potential for automation and self-service is well utilized so that services are perceived as being simple, effective, and user-friendly.

Objectives for researchers

Researchers have the digital skills needed for the optimal utilization of ICT in their research in order to carry out their tasks efficiently and exploit the opportunities that digitalization provides for developing the discipline and processing research data effectively and appropriately.

Researchers have access to relevant scientific publications, a good overview of relevant researchers, and access to research data for their discipline.

Researchers have access to a well presented range of applications and services with sufficient resources for storage, calculations, and advanced user support.

Researchers have access to user-friendly ICT support functions that meet the needs of their day-to-day work in terms of both academic and administrative tasks.

Researchers have access to infrastructure and tools that enable them to interact effectively with other researchers across sectors, nationally and internationally.

Researchers use tools for digital interaction in order to work efficiently on projects and in networks, both internally and externally.

Objectives for the management at all levels

Management leverages the opportunities provided by digitalization in order to achieve their institutions' goals by including digitalization in planning and in specific measures and processes.

Management is aware of their managerial responsibilities and has the skills to lead, motivate, and support the change processes necessary as a result of digitalization.

Management leverages the potential of digitalization to streamline administrative support functions and ensure effective governance.

Management maintains their institutions' values and interests and follows national policies through systematic efforts to improve information security.

Management puts in place formalized systems for the documentation of and remuneration of work relating to the development of teaching.

Management sets goals at a level that makes it possible for academia as a whole, and not just enthusiasts, to embrace the potential of digitalization for raising the quality of education.

Management ensures that the systems chosen facilitate interaction internally within the higher education sector, as well as with stakeholders outside the sector.

Management has easy access to information and decision-making support.

Digitization is prompting higher education

Digitization is prompting higher education also as never before. Nothing is unavoidable and we have the supremacy to form the way we use technologies. The digital revolution is edging its way into the classroom. It is now possible to have a archive in every classroom or even in the pocket. As Google Chief Eric Schmidt has said, 'the internet isn't making inevitable change faster; it has become the engine of change'.

As online education has been adapted by many universities, it has made approachable and shorten the distance between a student and his/her dreams. Online education is a type of distance learning. There is no need to attend the college or university in person. Coursera is an educational technology company which works with universities to make some of their courses available online. E-learning or computer-based training includes all forms of electronically supported learning and teaching. It also includes educational technology.

21st century teaching and learning trends

Various teachers are ready to accept the wave of digitization but more effort still need to be exercised when it comes to teacher training. Outmoded teaching methods need to meet with 21st century teaching and learning trends. By getting digitalize, the material has the power to involve students in methods that aren't possible with stationary pages. Educators, who have expressed that difficulty in engaging students is one of the major tests of their jobs, have described the feeling of joy when they see, something click in a student's eyes.

Redesigned Learning Spaces

Walk into most classrooms across the country and it's unlikely you'll find rows of desk all pointing toward the front of the room. Educators have since realized their classrooms must mimic the workforce, which has inspired them to create collaborative-friendly spaces to facilitate student learning. The on boarding of technology has supported their endeavor. 21st century classrooms are SMART boards instead of chalkboards and pods of SMART desks instead of individual seating. Students are going on virtual field trips instead of merely reading from a text; they are creating media instead of just looking at it. The redesigned learning space is laden with integrated technology, which means students aren't just using these things, but they understand how to use them in order to achieve a specific goal. Moreover, some of these learning spaces aren't even in the classroom. Colleges and universities are creating more informal campus learning spaces because they understand the importance of creating and collaborating 24/7, not just when class is in session.

Artificial Intelligence

The use of AI in higher education has already proven useful. Australia's Deaken University used IBM Watson to create a virtual student advisory service that was available 24-hours a day, seven days a week. Watson's virtual advisors fielded more than 30,000 questions in the first trimester, freeing up the actual advisors to handle more advanced issues. Another use for AI includes chat bots. Because chat bots are equipped with Natural Language Progression, as found in Sire, they have the human capability of answer questions about homework, helping students through a paperwork process like financial aid or paying bills, and easing the workload of the people who would normally serve these roles. Other applications of AI in education include personalizing learning (which is discussed in more detail below), evaluating the quality of curriculum and content, and facilitating one-on-one tutoring with the use of Intelligent Tutoring Systems. Technology doesn't aim to replace teachers, only to complement them.

New technology and new learning models are exciting and offer previously unthinkable possibilities to students, but they require constant IT support. As educational institutions

continue to jump on the bandwagon and adopt these digital transformation trends, we must consider the current paradigm for technology instruction and move toward a team-based approach. As student expectations increase, responsiveness to those needs must increase as well.

Conclusion

As students, parents, educators and law makers get dissatisfied with the state of education and its inability to prepare students for a tech savvy and increasingly connected tomorrow, there is shift towards relying on innovation's key tenets, collaboration and experimentation -- to find better strategies to educate generation next. Technology's value to organizations and individuals increasingly extends beyond productivity to the enhancement of learning, collaborating, and decision making. Organizations thus find it increasingly important to develop and apply digital capabilities in order to survive, let alone thrive. It no longer suffices to think of technology as merely an arms race, in which the winners keep getting faster and cheaper. Meanwhile, colleges and universities struggle to fund wireless access, standardize and upgrade classroom technologies, and decide what to do about aging enterprise applications. IT funding in higher education remains a zero-sum game, but with growing evidence that such an approach is like paying a fixed amount on a credit card or a payday loan: a sure strategy for digital insolvency.

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