

DIGITAL TRANSFORMATION IN SCIENCE AND TECHNOLOGY AT SAO DO UNIVERSITY

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1. Introduction

Digital transformation is the integration of digital technologies to apply in all areas of life and production to change the way of operation and provide the best service to users. In essence, digital transformation does not change core values, but transforms core operations through technology and digital platforms. Digital transformation opens opportunities for all countries to develop technology and economy. Countries can make good use of the opportunity to make a breakthrough in socio-economic development by skipping intermediate steps. Therefore, the Government and businesses in Vietnam have quickly seized the opportunity and have synchronously deployed many prizes to implement digital transformation in activities. In June 2020, the Prime Minister approved the program "National digital transformation to 2025, orientation to 2030", with the goal of Vietnam joining the group of 50 leading countries in e-Government (EGDI). The program emphasizes that people are at the heart of digital transformation. Areas that have a strong impact on the whole society and people will be interested in creating the fastest change in awareness and action, helping to save costs and improve work quality. In which, there are 8 priority areas for implementation such as: health, education, finance - banking, agriculture, transportation and logistics, energy, natural resources and environment and products industrial production.

In higher education, digital transformation offers the opportunity to apply technology to create changes in models, organizations, teaching and learning methods. This is a fundamental change in thinking and organizational methods, requiring the identification of models, operating methods, methods of testing new problems in order to improve and achieve the set goals. In the field of education and training, tasks and solutions will be focused for digital transformation as the basis for developing a platform to support distance teaching and learning, apply digital technology to support management, teaching and learning, digitizing documents and textbooks, building a digital platform to share resources to support the teaching and learning process in both face-to-face and online forms,... Therefore, higher education institutions need to adjust and supplement new content into training programs such as artificial intelligence, big data, etc. At the same time, gradually popularize the online exam; recognize the value of online training certificates,...

Over the past years, the Covid-19 epidemic has developed complicatedly, greatly affecting the whole world, including Vietnam. We have taken the initiative to adapt and create a fundamental leap in digital transformation, in which the healthcare, industry, commerce, finance, banking and education have achieved many achievements positively. In which, education and training have implemented digital transformation and brought the most obvious results. Digital transformation in education is the process of changing the method of carrying out traditional education with a modern educational method, including facilities, teaching methods, and educational management methods. The process of digital transformation offers the opportunity to apply information technology to create changes in the model, organization and method of teaching. Therefore, Sao Do University (SDU) focuses on three main contents to organize digital transformation such as: Digital transformation in school administration; digital transformation in the process of teaching - learning, testing, assessment, scientific research, international cooperation and digital transformation in developing digital learning resources and electronic libraries.

However, the digital transformation process needs to ensure synchronization in terms of infrastructure, equipment, technology, funding, etc. In fact, it is recognized that these platforms are still fragmented and not synchronized in the whole system and has not fully exploited technology to serve training, has not really supported the administration and management, has not met the increasing requirements of learners, etc. Besides, the transformation process in some universities has also faced a few challenges such as the determination of leadership, management capacity, the mindset of faculty and students. They are faced with new teaching methods, new training models, management and interaction in cyberspace. In addition, digital transformation requires the personnel directly conducting the training to have sufficient skills in using technology, management methods to process information, data on software, and databases for the entire operation. Education and management activities of all levels take place on the same platform, compatible, connected and integrated with each other.

2. Results

Mission to 2025: Training associated with research, application and transfer of science and technology, learning goes hand in hand with practice, theory with practice, school with business, graduating with good health; comprehensive competencies and skills; confident, creative; stable income and advancement opportunities.

Vision to 2030: The SDU development strategy is oriented to practical university: Prioritize investment in key and traditional technical fields of the university into a spearhead branch, promote activities such as science and technology creation, improve practical ability, apply technology transfer in accordance with the fourth industrial Revolution.

2.1. Scientific research

From 2010 to now, the SDU has finished many projects in which, the projects implemented are mainly in the field of engineering and technology, such as:

- 01 branch of national project.
- 01 science and technology project of Vingroup Innovation Fund (VINIF).
- 25 research projects at the provincial and ministerial level.
- 528 research projects at the SDU's level.
- More than 950 scientific works are published in specialized magazines at home and abroad. Each year, there are 15 to 20 scientific research projects of students in the fields of science and technology, etc.

Journal of Scientific Research (JSR) of Sao Do University (P. ISSN 1859-4190, E. ISSN 2815 - 553X) issued 04 number per year. In 2021, JSR was licensed by the Ministry of Information and Communications to carry out two types of journalism (print and electronic magazines) and Mechanical Engineering has been into the scientific list of Vietnam's council professor. In 2022, Electric – Electronic – Automation and Philosophy – Politics – Sociology had been into the scientific list of Vietnam's council professor.

The products of bottled drinking water and natural mineral water named FT-SDU conform to the standard of QCVN 6-1: 2010/BYT certified by the National Office of Intellectual Property as exclusive trademark.

Many lecturers and students won high prizes in the technical contest of Hai Duong province and science and technology innovation in Vietnam. The SDU has created the best conditions for students to participate in activities such as creation of robots, Asean skills, Ministry level skills, National level skills. Many students of the SDU won high prizes in the exams at the ministerial, provincial, national and international level and in the national mathematics, mechanics and information Olympic with a view to create motivation, creativeness acknowledge the scientific and technical intelligence in students. From 2010 to now, the university has 31 robocon teams that reached the final round of the country, including one team that won the third prize in 2019 such as:

- 34 works won the prize at the Technical contest at the provincial and national level.
- Ministerial and provincial level: 98 students won the prize, including 5 First prizes, 9 Second prizes, 28 Third prizes.
- National and international level: 45 students have won the prizes, including 01 international Third prize; 02 First prizes, 05 Second prizes, 09 Third prizes nationally.

2.2. Cooperation

Domestic cooperation: The SDU has established a domestic cooperative relationship with more than 50 groups such as Vingroup, Hong Hai Group, Hoa Phat

Group, Canon Vietnam, Samsung Vietnam, Tinh Loi Garment Company Ltd, Regina Miracle International Vietnam Company Ltd, Viet Nam CAD/CAM Technology Company Ltd, Viet Nam TCL Technology Electronics Co, NISSEI Technology Vietnam Company Ltd, and other Association such as Vietnam Tourism Association, Science and Technology Club of colleges and universities.

International cooperation: The SDU has expanded cooperation with other countries in training, science and technology such as JICA Japan International Cooperation Agency; Participating in the AIG cohesion project of the Ministry of Industry and Trade and the Ministry of Foreign Affairs of Korea; Chinese Academy of Labor and Social Security; Technology Huaxia University - Taiwan (China); Japanese Association of Ceremonial Cultural Cultures; Seoul National University of Science and Technology, South Korea; Hankuk University, Korea; Kobe Japanese Language Institute - Japan; Saint-Petersburg Forestry Academy Russian Federation; ITESCIA Academy, Republic of France, etc...

2.3. Technology transfer

Since 2010, the SDU has transferred more than 100 scientific works to enterprises, companies and different factories, some of those are listed as followed: designing smart car parks in Chi Linh city; restoring the screw extruded surface by using the SMAW welding technology to transfer to the Viglacera Quang Ninh company; using PIC 16 F877A micro controller designed control system, anti-theft surveillance, fire alarm at the garment factories. The University has organized many transferring classes on CNC, CAM and CNC technology. These transfer works have helped enterprises improve production lines, improve quality and production efficiency.

3. Conclusion

Over the years, the digital transformation process at Sao Do University has still taken place and has become one of the central tasks of the university. The process of digital transformation in a number of key areas such as training, scientific research, and human resource management has brought good results. It has created a great impetus for the university's faster and more sustainable development at present and in the future.