Application of digital technology in training art and design in HCMC, VN

Anh Ngo Thi Thuy (*)

Van Lang University

Abstract: Vietnam is in the world integration with advances in science and technology in many aspects of life, especially in training and education. Traditional training courses have many changes, becoming flexible with applying technology in online classes that help learners easily adapt to digital transformation. From the perspective of the lecturers of the Arts & Design Faculty, VLU, the article analyzes the reality, the benefits and practical effects of the application of information technology in the specialized curricula of of creative design - Industrial Design and propose training and development orientations to attract many young people to study in the future.

Keywords: Arts & Design - education - training - online - digital transformation.

[Abstracts in spanish and portuguese and curriculum on p. 68].

Introduction

In the world, online training forms have developed diversely so that learners can maximize their creativity and practice according to the development of technology such as exposure to new materials, or software that supports product simulation… However, when applied in Vietnam, there are still many limitations and there is no specific and appropriate method. Universities are still struggling and trying to change the way of training so that they can balance between learning and practice, theory and practice, with cohesion and meeting the needs of businesses. Production, especially supplementing knowledge sources without interruption of training during the Covid epidemic. Experience as well as practice has shown that education and training is one of the fields that are affected faster than most, because education itself will create new resources that are closely related to the next industrial revolution, especially in the education and training environment of the university system.

1. Reality of training in the field of fine arts and design in Ho Chi Minh City

The professions in the field of Fine Arts & Design are being trained according to the needs of society. However, not all majors are attractive to learners, so most universities choose to open majors that attract many learners such as Graphic Design, Fashion Design, Interior design. Although the Industrial Design industry has a lot of potential for development, it is not a strength when Vietnam's industry is still in the stage of assembly and processing for foreign companies and FDI companies. The Interior Design industry is still a bright industry, suitable for the modern social context of Vietnam when people's living standards are improved, the demand for home construction and living space design is more focused. Some schools have specialized training in digital art, interactive art according to the development of the

technological revolution. The school is a place to supply qualified workers for businesses, but when accepting workers, businesses must spend more time and money to re-train them. The reason is that the training program has not yet caught up with the business trend, still using the traditional training program framework.

This leads to the fact that although learners successfully complete the training program, businesses still have difficulty in finding human resources who can meet the recruitment requirements. Employers still lack workers in both quantity and quality. Most businesses have to bear additional costs for additional training or skill training for employees from the beginning, especially for industries that use modern and high-tech machinery and equipment. This is wasteful and costly because personnel trained in this solution are usually only suitable for block engineering. Product human resources are senior personnel who ask in addition to specialized knowledge, practical experience, high aesthetics, must have knowledge of engineering, technology, socio - psychology…

The training in schools and establishments is a reality that needs attention and changes to be more appropriate because the purpose of training is to provide the society with a qualified workforce that can meet the needs of the society. employment needs of the labor market in terms of practical skills, in-depth and practical knowledge and experience. In the process of developing the training program, the Faculty of Arts & Design, Van Lang University always updates new methods, compares the program with domestic and international schools, combined with the needs of students, as well as reality of business and the development of science and technology. This time, the Faculty of Arts & Design, Van Lang University is perfecting the online and offline training program standards and aiming for long-term development for all branches. Online classes are focused on investing and improving the system a lot, supporting students more in exchanging, sharing and updating lessons quickly and conveniently.

2. Proposals for future training development orientation

2.1. Education and training associated with technology and internet platforms

The development of digital devices with diverse application software has opened a new era that changes people's habits, needs, tastes and modes of operation in life, work, production, learning and entertainment… In Vietnam, with the appearance of the Internet, it has contributed to changing and erasing all geographical distances. The world is gradually flattening, according to Thomas L. Friedman (2006): "Individuals from every corner of the flat world are being empowered". The digital revolution is the era of digital application, integration of smart technologies in all aspects and fields, which has a strong influence on the economic, political, cultural and social systems of many countries, making a lot of changes in people's lives. Therefore, education and training cannot stay out of the global vortex and traditional higher education will have to change and change direction according to the development of science and technology.

Developing an E-learning online program

Vietnam is taking the initiative in the era of strong and continuous development of information technology, information technology programs are no longer a novelty for everyone, especially young Vietnamese today. Along with the internet, the knowledge shared in the fields and cultural aspects of each ethnic group around the world can be found online with just a few clicks of the mouse. Students easily interact with learning materials from anywhere or share and discuss their ideas with each other, expanding knowledge in the community. Social networks and communication technologies are both applicable to work, as almost everyone uses them to communicate and exchange content online. In the curriculum that applies information technology in teaching, a new term has appeared and become more and more popular, which is the term E-learning.

E-learning is a form of online learning that has been widely used in universities around the world, contributing to a positive change in the way of teaching and learning of both lecturers and learners. This is a flexible and diverse curriculum, applying information technology to help learners access education anywhere. E-learning is considered a kind of education with a new and positive form of training, helping to expand the concept of education. Universities around the world have built online learning programs as an opportunity for students in other countries to study in an international environment, have full experience and exposure to new cultures. , helping students explore the world around them, develop themselves, and access and absorb knowledge with advanced education in different countries. During the current Covid epidemic, this form of learning is more popular than ever. Through the internet, learners only need a few simple steps to become a global student when registering for an international E-learning program, without language barriers and geographical distance. In addition, they can freely choose the appropriate program, favorite lectures, or can choose famous professors at prestigious universities in the world at a reasonable cost. Moreover, learners can communicate directly with the lecturer. This is especially convenient for building a learning model that meets the requirements of learners in the digital age. In a learning environment that requires the creativity of the design industry, the application of technology Information technology is an indispensable part, technological breakthroughs also strongly affect the development of this industry.

Design a learning program with a variety of online lectures

Currently, some universities in Vietnam have incorporated the LMS (Learning Management System) - online learning management system into the curricula and assessed students' learning effectiveness. The system has "blurred the gap between online learning and traditional focused learning" (What is LMS, 2018). Contributing to this LMS system is online lessons that are built with vivid, attractive explanations, creating excitement for students to learn and explore. Learners actively monitor online lessons and equip theoretical content according to the program provided on the school system at home. During class time, most lecturers will answer students' questions, help students complete and edit exercises, project systems, and design drawings to reinforce and develop more concepts. concept of learned knowledge. The content of the curriculum is always updated continuously on the website, so learners can access and download data to their personal devices freely, access the lesson content anytime or anywhere, even no need for a classroom teacher. Online lessons are arranged in a methodical and logical manner according to the content of each lesson or by topic, suitable for each level of the module, so that students can easily grasp the content. Usually there will be theoretical content of the lesson with accompanying illustrations to explain the lesson. Incorporating the recorded lectures of the teacher can be videos that reflect actual production activities at businesses or detailed and specific practice-guided demos. Followed by a system of multiple-choice questions and exercises to help students system and reinforce the content they have learned. In addition, instructors can provide other relevant resources or broaden students' knowledge from other reference websites.

2.2. Increase the use of simulation software technologies, virtual reality in training programs

New methods of education and training will pay more attention to learners. In the field of design majors, learners need to have practical experiences while still in school, so that they can apply them to projects and create better creative ideas. In the traditional way of teaching and training, Industrial Design still applies old techniques and technologies into the design process. To create a complete demo product, because of the small quantity (one product or a set with many different designs), students have difficulty in finding a place to process and finish their product. There are factories that accept

outsourcing but with high costs, so to save money, students tend to do the product by themselves. The process of doing the prototype according to the design only uses rudimentary manual technology (welding, sawing, chiseling, drilling, grinding, coating ...) and exposed to a lot of chemicals and materials toxic (such as plaster, epoxy, oil, gasoline, etc.), without proper labor protection equipment, can cause their health hazards. The practical room of the Industrial Design industry is always full of chemicals and dirt, sawdust from plaster, wood, metal, fiberglass... With a 4-year program, there is no need to learn but only just thinking about it makes learners feel anxious and hesitant when choosing to study Industrial Design.

Digital technology allowing learners to receive new technologies greatly supports the learning process. Design work is connected with computers and advanced technology systems to simulate products in virtual space. It is important to master the supporting design software, as well as the technical operation of the machine system. And not to mention 3D printing technology brings many benefits to users, especially for Industrial design. This printing technology is capable of creating real product shapes based on the specifications of the drawings on the machine with the feature of partial additive and can use a variety of input materials to shape according to production requirements, reducing the time learners have to create shapes on gypsum, clay, composite plastic, foam, etc., while protecting the health of learners. Currently, Van Lang University has been transferred this 3D printing technology into practical teaching and learning.

Training and learning curricula need to be constantly updated, changed or supplemented with specialized programs on information technology software, upgraded old versions to meet the teaching method according to technology. New technology for Design majors. Technologists make future predictions about virtual reality's dominance of 3D simulation space in setting up new educational models such as virtual classrooms, virtual instructors, virtual devices, and classrooms. Experiments and virtual libraries... Virtual reality technology creates (Virtual Reality - VR), creating a 3-dimensional space that is programmed with simulations by machine equipment, describing the surrounding world as real, people will directly interact with that space with all the senses. This will help a lot in the process of building training programs related to space, product images, actual materials. Users of virtual technology can see and grasp the textures of sample products in virtual space, can freely control (hold, grasp, move, arrange, ...) as well as change that object as outside reality. The virtual reality model will contribute to promoting distance learning, a modern education method that is being developed by many places due to overcoming limitations of geographical separation and reducing travel costs. At Van Lang University, VR technology has been applied in teaching a number of subjects specializing in creative design. The application of 3D and VR technologies in teaching contributes to the transformation of training methods from traditional to modern, catching up with new trends, bringing the

desired effect in imparting knowledge, improving quality teaching and learning.

2.3. Exchange cooperation online with universities around the world

The issue of academic exchange and international training links has been and is being implemented as an inevitable trend of the times. The advent of modern media allows to create a wide range of communication, connection and interaction environments, helping the exchange of information and academics in the digital age through the Internet overtaken through the limitations of space and time. The online exchange program between universities around the world contributes to reducing travel costs and is a great opportunity to expand the network of international cooperation. This is a method to improve training quality, update modern advanced knowledge, and contribute to improving teaching quality for lecturers. Technology to support academic exchange helps lecturers build optimal learning plans for their training and further develop their own scientific research topics. In addition, it also supports creativity to guide and generate new ideas with lecturers at foreign partner schools, thereby fostering professional capacity, approaching and learning how to work, teaching in a professional international environment.

Conclusion

The modern higher education environment has been forced to change for better development. In the digital age, education, training and science and technology need to go hand in hand. The factors of the digital age have posed for learners the problem of changing their own cognitive thinking in a more positive direction, not only equipping them with basic knowledge but also having to prepare themselves for knowledge. information technology, soft skills... to be able to join the technology playground. The knowledge that learners need to equip is no longer confined to the major of Fine Arts & Design but also has to be extended to other professions. The training program also needs to have changes in direction and approach to learners to match the requirements of modern society. Training human resources in an open-minded manner, ready to learn and absorb new things is a decisive factor in the success of future educational programs. Because in the future, all industries are linked with each other, so to get a job, learners need to have general knowledge and more diverse job skills.

It is necessary for universities to build a complete training system for applying digital technology to teaching in order to better serve the needs of learners. The application of information technology in higher education, especially in the field of teaching creative design, is a necessary requirement stemming from specialized characteristics. Lessons and materials using new technology will help to diversify, more lively, interact and connect with learners more effectively. The innovation of teaching methods and forms combined with the power of information technology, exploiting the potential of digital devices

for educational purposes is an inevitable trend and will become the norm. To move towards modernizing education in the future - to train high-quality human resources with solid knowledge, thinking and skills to meet the labor market, the actual needs of the society, and the law. international cooperation in the era of integration.

References

Thomas L. Friedman (2006). *The world is flat 3.0: A brief history of the twenty-first*, 3rd Ed. Picador: USA.

https://automation.net.vn/Cong-nghe-Ung-dung/Ung-dung-cong-nghe-thuc-te-ao-trong-hoat-dong-dao-tao.html

https://sohoanoidung.com/lms/

http://bvu.edu.vn/bvu/-asset_publisher/1SS24BzdXWeD/content/cach-mang-cong-nghiep-4-0-voi-giao-duc-ai-hoc-noi-chung-va-ai-hoc-ba-ria-vung-tau-noi-rieng

Resumen: Vietnam está en la integración mundial con los avances de la ciencia y la tecnología en muchos aspectos de la vida, especialmente en la formación y la educación. Los cursos de formación tradicionales tienen muchos cambios, volviéndose más flexibles con la aplicación de la tecnología en las clases en línea que ayudan a los alumnos a adaptarse fácilmente a la transformación digital. Desde la perspectiva de los profesores de la Facultad de Artes y Diseño, VLU, el artículo analiza la realidad, los beneficios y los efectos prácticos de la aplicación de la tecnología de la información en los planes de estudio especializados de diseño creativo - Diseño Industrial y proponer orientaciones de formación y desarrollo para atraer a muchos jóvenes a estudiar en el futuro.

Palabras clave: Arte y Diseño - educación - formación - online - transformación digital.

Resumo: O Vietnã está no mundo integrado aos avanços da ciência e da tecnologia em muitos aspectos da vida, especialmente no treinamento e na educação. Os cursos tradicionais de treinamento têm muitas mudanças, tornando-se flexíveis com a aplicação da tecnologia em aulas on-line que ajudam os alunos a se adaptarem facilmente à transformação digital. Da perspectiva dos professores da Faculdade de Artes e Design, VLU, o artigo analisa a realidade, os benefícios e os efeitos práticos da aplicação da tecnologia da informação nos currículos especializados de design criativo - Design Industrial e propõe orientações de treinamento e desenvolvimento para atrair muitos jovens a estudar no futuro.

Palavras chave: Artes & Design - educação - treinamento - online - transformação digital.

(*) Anh Ngo Thi Thuy: Van Lang University (VLU) Experience: - Graphic design Lecturer in HIU - Industrial designer - Graduated at University Architecture HCMC - Graduated Master of Arts at HCMC University of FineArt - Studing Docterate at HCMC University of FineArt Address: 3/3A, Str.160, Tang Nhon Phu A Ward, Dist.9, HCMC, Vietnam