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DIRECTORATE OF VOCATIONAL EDUCATION AND TRAINING

REPORT

STATUS OF DIGITAL TRANSFORMATION OF TVET IN VIETNAM

Hanoi, May 2021



General Information

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RESEARCH REPORT STATUS OF DIGITAL TRANSFORMATION FOR TVET IN VIETNAM

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ACRONYMS

	Acronym	Description
1.	DE	Digital Environment
2.	DVET	General Directorate of Vocational Education and Training
3.	DX	Digital Transformation
4.	DI	Digital Infrastructure
5.	DM	Digital Material
6.	DP	Digital Platform
7.	4IR	The Fourth Industrial Revolution
8.	IT	Information Technology
9.	ICT	Information and Communication Technology
10.	ILO	International Labour Organization
11.	ITCILO	International Training Centre of the ILO
12.	IPU	Inter-Parliamentary Union
13.	MFIs	Microfinance institutions
14.	NGO	Non-Governmental Organization
15.	TVET	Technical and Vocational Education and Training
16.	UN	United Nations
17.	UNDP	United Nations Development Fund
18.	UNESCO	United Nations Educational, Scientific and Cultural Organization
19.	UNICEF	United Nations Children's Fund

ABSTRACT

This report, organised by the “Reform of Technical Vocational Education and Training in Viet Nam” program, presents the current state of Digital Transformation (DX) in Technical Vocational Education and Training (TVET) sector in Vietnam. The purpose of the report is to better understand the impacts, challenges, determinants of success factors, as well as the needs of TVET institutions in DX.

The study applied 04 main methods, including: (1) literature review and questionnaire development; (2) group discussion; (3) online questionnaire survey; (4) and fieldtrip study with face-to-face interviews.

After reviewing documents and group discussions, the DX ecosystem in Education and Training (Bao Ho, 2021) was chosen to apply in TVET. It contains 6 components: (1) Education and training content, (2) Teaching and learning methods, (3) Digital teachers and learner, (4) Digital infrastructure, platforms, and learning materials, (5) Digital administration and management, (6) Institutional and legal frameworks.

The online questionnaire survey was conducted in April 2021, with the participation of 20,716 people from different target groups, belonging to 123 educational institutions, 17 Departments of Labor and Invalids and Social Affairs (LOLISA) and General Directorate of Vocational Education and Training. In the same time, the fieldtrip study was also carried out at 14 TVET institutions in 5 provinces/cities (Hanoi, Son La, Yen Bai, Kon Tum and Ca Mau).

From the results of the above steps, the report has made observations in 6 issue groups and recommendations for DX in TVET with specific evidences. The six observations include: (1) the limitation and ambiguity of digital content innovation at TVET institutions - it should have a clearer plan to reform education and training content; (2) wide usage of outdated teaching and learning methods - it should deploy new and advanced methods on the digital environment soon (such as blended learning, flipped learning...); (3) lack of infrastructure, platforms, digital learning materials, they need to be upgraded and diversified to meet the needs of DX; (4) teachers and learners need to be supported and trained to improve their capacity in DX; (5) administration and management limits to IT application, it is necessary to apply more strongly data-based decision-making methods;

(6) many difficulties in DX implementation due to the unclear institutional and legal framework, it should issue circulars and guidelines for TVET institutions in the DX implementation soon.

1. Introduction

1.1. Reform of Technical Vocational Education and Training in Viet Nam - TVET Programme

The Vietnam-Germany technical cooperation program ““Reform of Technical Vocational Education and Training in Viet Nam” (TVET Programme)”, is financed by the German Ministry of Economic Cooperation and Development (BMZ) with counterpart funds from the Vietnamese Government, with the objective to support “TVET in Vietnam better adapt to the changing world of work”. The program has the participation of the German Development Cooperation (GIZ) and the Directorate of Vocational Education and Training (DVET) under the Ministry of Labour, Invalides and Social Affairs (MoLISA).

The program has three main objectives:

- State actors, TVET staff, TVET institutions and the business sector are interconnected
- The regulatory framework of TVET is aligned to the requirements of the changing world of work
- The concept of High-Quality TVET institutions is successfully implemented in selected TVET institutions.

1.2. Background

Since the Law 74/2014/QH13 on vocational education was promulgated in 2014, Vietnam has achieved many achievements in the field of TVET, for example, the TVET network has been expanded and distributed relatively reasonable in economic sectors, localities, regions; the number of teaching staff has increased rapidly, professional qualifications, pedagogical skills, vocational skills, informatics and foreign languages have been gradually improved; Vietnam has nearly 2000 TVET institutions, of which: 397 colleges; 512 intermediate schools and 1031 vocational education centers...

However, TVET still faces many challenges, especially in the context of rapidly developing science and technology, especially the 4th industrial revolution (4IR), digital technologies, information and communication technologies.

Starting from the 21st century, 4IR that is characterized by breakthroughs and resonances of digital technologies, especially Artificial Intelligence, has created many opportunities as well as challenges for TVET in Vietnam. 4IR makes the labor market transform into a new stage of development with the creation of the 4.0 world of work. Many new career opportunities appear, many breakthrough technologies are introduced, which allows many fields, including TVET, to change toward increasing labor efficiency, saving costs of time and money. However, there are many new requirements about knowledge and skills that employers need to have, some occupations will be reduced, even some jobs will be lost.

DX is considered as the core and backbone of the 4IR (Bao HO, Dung Nguyen, & Quang Nguyen, 2020). In the field of Education and Training, and in TVET, besides bringing a new method in management as well as in learning and teaching, DX has an important role in equipping knowledge, life and labor skills for learners to work and live in the new environment (Bao Ho, 2021). In the context of the outbreak of the Covid-19 from 2019 to now, DX is a critical requirement for TVET, to respond new needs, improve operation performances, as well as easily adapt to external factors.

To facilitate the implementation of DX in general, and also in TVET in particular, the Government has issued many important documents to create a legal framework, including two decisions and directives: Decision No. 749/QD-TTg issued on the 3rd June, 2020 of the Prime Minister on approving the National DX Program; Directive No. 24/CT-TTg issued on the 28th May, 2020 of the Prime Minister on promoting the development of

skilled human resources, contributing to improving labor productivity and increasing national competitiveness in the new situation.

In DX, identifying the current situation and orienting the destination are two important factors to have a suitable DX proposal and plans for the current situation of agencies/organisations. However, in TVET sector of Vietnam, there are no many researches about the current situation of DX, which can be used as starting point for a suitable DX proposals, programs and plans. Although, worldwide there are related works that have been carried out by BIBB, ILO, or UNESCO. In particular, the ILO launched the research “The Digitization of TVET and Skills Systems” in Brazil, Ghana, India, Kenya, Malaysia, Malta, Mauritius, New Zealand, Slovenia, Turkey and the United States, in 2019 (ILO, 2020). However, these researches are not relevant to the situation of Vietnam.

The TVET Programme with the aim of helping Vietnam's TVET adapt to the changing world of work, has organised several activities related to DX. This study follows the DX fact-finding activity at 11 partner vocational colleges, with the aim, firstly to verify the findings in the fact-finding process, and then to broaden the scope of the study, as well as research subjects to other groups of educational institutions, which are not partners of the program.

1.3. Research Question

To address the above issues, the TVET Programme has organised this study to fill the research gap and provide research-based evidence for policy advice, capacity development, and strategic planning for TVET sector in Vietnam.

Therefore, this study aims to respond to the following questions: (1) How has DX impacted on the TVET sector? (2) What determines a successful DX for selected TVET partners? (3) What main challenges pertain to DX at

selected TVET partners? (4) What are the main needs of the TVET stakeholders to overcome these challenges? The orientation of this study aims to respond to these questions.

1.4. Research Objectives

The above questions also aimed at the overall research objective of gaining insights into the status of DX in the TVET sector of Vietnam. More specifically, the study focuses on: (1) Uncovering impacts, challenges, and critical success factors associated with the 06 key aspects of DX at TVET partners, (2) Providing research-based evidence for developing policy advice, capacity development and strategic plan in the TVET sector of Vietnam, (3) Developing a set of concrete recommendations for the implementation of DX in the TVET sector of Vietnam (4) Suggestions for further studies on other aspects of DX, or scale-up of the research scope to the regional level (ASEAN).

2. Literature overview

2.1. Basic concepts

According to Vial (Vial, 2019) DX is “a process that aims to improve an entity by triggering significant changes to its properties through combinations of information, computing, communication, and connectivity technologies”. In general, DX promotes technologies to create value and new services for different stakeholders, as well as innovates and achieves rapid adaptation with the change of the life situation. DX is mainly introduced in the context of enterprises; however, it impacts other sectors and organizations as well; TVET and its institute is a typical example.

In Vietnam, DX is considered as a “*total and comprehensive changing process of individuals and organisations in the way of living, working and production methods in the digital environment with digital technologies*”. (Bao Ho, Dung Nguyen, & Quang Nguyen, 2020). Total change implies that

every part of the organisation needs to participate in and implement DX. While comprehensive change means that every operation aspect of an organisation or DX levels needs to be implemented. According to this research, DX is a long and complex process, which is often contains three levels: (1) Digitization; (2) Digitalization; (3) Digital Transformation:

- Digitization is the transformation of entities (objects, things) from physical form (analog) to digital form, that means the creation of digital versions of entities. The nature of digitization is the conversion. Digitization began when we had computers, because everything that wanted to be in a computer should be in digital form. Digitization and digital technologies create many digital opportunities for everyone. Digitization has changed very rapidly recently due to advances in digital technologies and Internet of Things.
- Exploiting digital opportunities (digitalization) is the level of using digital technologies and data in the operational process of organisations or enterprises. It is the application of IT to the activities of organisations and enterprises when digital opportunities increase. The nature of this level is adaptive. To effectively exploit digital opportunities, organisations or enterprises should usually innovate their operation models.
- Digital transformation is a total and comprehensive changing process of individuals and organisations in the way of living, working and production methods in the digital environment with digital technologies. DX is a system-level transformation process that aims to change its behavior on a large scale. The natural of DX is creation.

In the field of general education and TVET, the following components have an important role in the DX process (Bao Ho, 2021). First, it is the digital environment, which is “*an environment consisting of the natural world of entities (things) connected to cyberspace*” (Bao Ho, 2021). Data and

connection are the two typical features of a DE, in which data is made up from digitization of information, and connection is the interaction of entities through DE.

Following is Digital Infrastructure (DI), in education and training, DI refers to classes, schools, facilities, basic resources at the "foundation" level needed for teaching and learning activities. DI can be viewed in a narrow sense with two main components: Technical infrastructure (TI) and data infrastructure (Dal). In a broader sense, in addition to the above two components, we also have legal infrastructure (LI) and human infrastructure.

- DI includes device and connection infrastructure
- Dal includes technologies, processes, instructions on how to organize, operate, manage and use data; and important data sources need for the activities of an organisation or individual. For example, in Education, Dal needs to include database about teachers and students, training and management activities.
- LI for DX is the legal and institutional platform for DE on which the government, economic and social transformation will be performed.

Human infrastructure (HI) is the workforce for DX. When mentioning DI, it often mentions to the Digital Platform (DP) which is a DE, a system of digital tools (such as web applications, mobile applications, communication between services ...) that makes the application, software development, or human connection easily. In education sector, DP are systems of digital tools that facilitate online teaching and learning, monitoring and management classroom, or platforms for management and administration of schools.

Digital learning material (DLM) is a phrase that is often mentioned when talking about DX. DLM or e-learning materials are learning material that are digitized according to a format architecture and certain scenarios, stored on electronic devices such as computers, computer networks which to support the purpose of teaching and learning. More and more, thanks to

the *usage habits change* and *awareness* about electronic devices and the *connectivity* and *sharing ability* of learning materials on the digital environment, DLM has an important role in DX in education.

Digital formats can be text, dataset, audio, image, computer software, and mix of them. This format can be divided into 3 levels: (i) basic level; (ii) average level; and (iii) high level. At the basic level, DLM is usually a version of book and notebook that are captured, scanned and stored as individual files on a computer. At the average level, DLM is slides, videos, simulation software, content interpretation software. At this level, DLM is still stored as individual files on a computer, but the information is represented in a way that is richer, more diverse and more accessible... At the higher level, DLM is still the digital version of real materials. However, the information and data are no longer stored merely in separate files, they are stored and integrated into other programs (e.g. database management system) for more specialized tasks in teaching and learning, such as exploiting for learning with an adaptive route, assessment of learning process, assessment at the end of the course, etc.

2.2. Difficulties in DX

According to the DX Manual of the Ministry of Information and Communications (MIC, 2020), the biggest difficulty of DX is changing habits. The biggest challenge of DX is having the right perception. Humans have been accustomed to the real environment for centuries. Moving to the digital environment is changing habits. Changing habits is difficult and a long-term process. In an organisation, it depends mainly on the determination of leaders. DX is unprecedented, so getting it right is difficult. The correct perception of DX must also be placed in the specific context of an

organisation. DX is the matter of awareness, not a technology issue; the leader determination in doing or not doing.

Similarly, in TVET, changing teaching, working, learning of teachers and learners is a difficult task. In addition, changing the perception of school boards, department leaders, staffs and all lecturers, especially for the elderly, it is a big challenge.

Digital infrastructure (DI) is also a common challenge in DX. This problem not only appears in Vietnam but also very common in the world. According to the report of World Economic Forum (April 2020), “Billions of people are going online to stay in touch during the COVID-19 pandemic. But almost half of the world’s population has no access to the internet. Fewer than 1 in 5 people in the least developed countries are connected. This digital divide impacts women more than men.”

In addition, in TVET, due to the characteristics of the profession, learners need to practice more, however many proposed means and technologies for DX in teaching, such as online teaching with Microsoft Teams, Zoom Classroom and Google Classroom tools are only suitable for training theory-oriented courses.

2.3. DX in TVET in the world

DX in education, and TVET leads to changes in the labor market (Bilyalova A., 2019) and vice versa DX in industry requires the transformation of TVET and its institute. To have a successful DX in TVET, we should carefully consider both macro and micro level, in which the first level relates to legal framework and administrations (such as policy-development, governance, social dialogue, finance, equity), while the second one is elements that ensure the operation of TVET institutions themselves (like learning processes, staff, qualification systems, learning pathways, quality assurance, information and guidance).

In the literature, there are several works related to DX in TVET. For example, in 2020 ILO presented a report about the digitization of TVET and Skills Systems (ILO, 2020). This report provides a global, high-level snapshot of the digitalization of TVET and skills systems in a set of countries and international organizations. It also presents some interesting ideas, finding, and recommendation to enhance DX of TVET. BIBB (BIBB, 2021) also reserved a concrete topic, in which they present a series of articles about DX of TVET and new technologies applicable for this. Similarly, UNESCO (UNESCO, 2020) create a topic that collected different articles and reports about it. However, these works did not present a conceptual framework, including a clear definition, important factors, and a comprehensive research for DX in TVET. They usually focus on a specific aspect, such as technology application for DX, examples of DX and so on.

Moreover, there are several works that propose/summarize many useful technologies for DX in education. For instance, Mhlanga et al. (David Mhlanga, 2020) summarized a set of DX technologies using in the Education in South Africa, including Virtual Learning (see Table 1), Application and Educational Website (Table 2), Social Media Apps (Table 3), Remote learning (Table 4).

Tools Used	Description	Connectivity	Platform	Conditions of Use	Target Group
Television (SABC, DSTV, E.tv)	Teachers delivering lessons live to learners on TV	Offline	Television Desktop	Free(lockdown)	Primary Secondary
Radio (SABC)	Teachers deliver lessons live to learners	Offline	Radio/desktop	Free(lockdown)	Primary Secondary

Table 1. Virtual Classes (David Mhlanga, 2020)

Tools Used	Description	Connectivity	Platform	Conditions of Use	Target Group
Mobile Platforms and applications (Vodacom, Cell C, MTN)	Learners access learning material from educational and informational (reference) websites	Online	Desktop/ laptop/ mobile	Free (lockdown)	Primary/ secondary/ tertiary

Table 2. Applications and educational websites (David Mhlanga, 2020)

Tools Used	Description	Connectivity	Platform	Conditions of Use	Target Group
Internet (website), (Ms Zora, SF, Siyavula, DBE)	Teachers in public and private schools offer classes through a live stream	Online	Desktop laptop mobile	Free (Lockdown)	Primary Secondary
Facebook (Ms Zora)	Teachers in public and private schools offer classes through a live stream	Online	Desktop Laptop Mobile	Free (lockdown)	Primary Secondary
Twitter (Ms Zora)	Teachers in public and private schools offer classes through a live stream	Online	Desktop Laptop mobile	Free (lockdown)	Primary Secondary

Table 3. Social Media Apps (David Mhlanga, 2020)

Tools Used	Description	Connectivity	Platform	Conditions of Use	Target Group
Internet (Websites) YouTube (Most universities)	Learners Learn on their own at home	Online	Desktop/ Laptop/ Mobile	All rights reserved	Tertiary/ primary/ secondary
Microsoft Teams	Used mainly by staff and learners in tertiary institutions to hold discussions	Online	Desktop/ Laptop/ mobile	Freemium	Tertiary
Skype	Used mainly by staff and learners in tertiary institutions to hold discussions	Online	Desktop/ Laptop/ Mobile	Freemium/ All rights reserved	Tertiary
WhatsApp groups	Used mainly by staff and learners in tertiary institutions to hold discussions	Online	Desktop/ Laptop mobile	All rights reserved	Tertiary
Zoom	Group discussions	Online	Desktop	Freemium	Tertiary

Table 4. Technologies for Remote learning (David Mhlanga, 2020)

However, these works usually focus on traditional classrooms and theory-oriented courses (Primary, Secondary, Tertiary), the practical and dedicated

learning like TVET still lacks a comprehensive research about the status of DX, especially in Vietnam.

2.4. DX in TVET of Vietnam

In Vietnam, there are also some works about DX. Regarding the legal framework, the Decision No. 749/QĐ-TTg dated June 3, 2020 is the important one that promotes DX in all aspects. The first decision approves the national program on digital transformation until 2025, with a vision toward 2030, aiming to make Vietnam among the world's top 50 countries in terms of the E-Government Development Index (EGDI). The approved program has the dual goal of developing a digital government, economy and society while establishing Vietnamese digital technology enterprises that can go global. Education is one of the priority field (just after the medical field) that should be digitized first, in which several models/processes has been proposed to apply in the field, such as remote learning and teaching, STEAM model, MOOCS and so on. As a sub-field of Education, TVET Sector should follow the decision in its DX.

Recently, the Prime Minister has issued the Directive No. 24/CT-TTg dated May 28, 2020 that accelerates the development of occupationally skilled human resources, and helps to raise productivity and national competitiveness in the new situation of DX. It focuses on effectively implementing mechanisms and policies to (i) develop vocational education and human resources with vocational skills; (ii) enhance digital transformation and online training, ensures learners have professional, soft and digital skills ...; and to adapt to the requirements of the labor market, with a vision toward 2030, Vietnam's vocational education will approach the level of ASEAN-4 countries, by 2045 to approach qualifications G20 countries.

In addition, according to a report of DVET (Nghề nghiệp Cuộc sống, 2020), from 2017 to 2020, DVET has implemented many DX activities, such as building technical infrastructure for DX; applying IT in the management of vocational education in order to modernize, innovate and improve the capacity of state management on vocational education; building a management information system and database of vocational training from DVET to provincial Departments of Labor Invalid and Social Affairs (DoLISA) and to the vocational training institution. Thus, in macro level, TVET Sector already has basic policies, regulation and many supports for DX. However, to really implement DX in a comprehensive and comprehensive way in TVET, there are still lacks of specific guiding policies for TVET institutions.

Regarding micro level, there are no many researches and evidence about DX in Vietnam. It lacks researched related to DX for learning processes, staff, qualification systems, learning pathways, quality assurance, information and guidance.

2.5. DX Ecosystem in TVET sector

DX in Education and Training can be considered through 6 components of the following ecosystem (Bao Ho, 2021).



Figure 1. DX Ecosystem in Education and Training (Bao Ho, 2021)

1. **Education and Training Content:** Redefine content with the knowledge and skills that learners need to know and have in the times they will live. The training program needs to be updated and adjusted to meet the new needs of DX. Besides, in addition to innovating the content to meet the needs of the market and businesses, the training contents also need to be designed in a modular way, in which it is easy to change and suitable with new teaching and learning methods.
2. **Learning and Teaching Method:** To adapt to the situation and ability of learners in the new era, it is necessary to change and update teaching methods. Advanced teaching and learning methods such as Blended Learning, Project-Based Learning, Flipped Learning, Adaptive Learning are suitable methods on the digital environment.

- 3. Digital Teacher and Learner:** In DX, with the application of new teaching and learning methods, teachers should play the "coach" role who guides and accompanies students. Therefore, governing bodies need to disseminate and train teachers, firstly, about DX awareness, their new role in DX, and then the new teaching and learning methods. With learners who plays the central role in learning, it should guide them to be active in learning, self-direction, increasing self-study ability, study anytime, and anywhere.
- 4. Digital Infrastructure, Platform and Learning Material:** To work in the new environment created from DX, educational institutions need to ensure and be ensured the three basic factors related to infrastructure, information and data: having Digital Infrastructure to serve for operation; supported by a Digital Platform that meets the needs of teaching, learning and working in the digital environment; harmoniously coordinate both textbooks and digital learning materials in teaching and learning. Digital infrastructure usually belongs to educational institutions (on-site or outsourced solutions), while digital platforms and learning materials, to save time and be highly effective, should be built through the contributions of industry groups, or subjects of interest.
- 5. Digital Administration and Management:** Education administration and management should apply new advance technologies. Once all relevant components (schools, classes, teachers, learners, staff) are digitized, connected, shared and interacted, administrators from local to centre can have data on the activities of the institution as well as the entire TVET industry. Executive decision making should be based on these data. In addition, the application of digital technologies and platforms in administrative departments is also an important issue in DX.

6. Institutional and Legal Framework: Digital transformation in TVET leads to a total and comprehensive change in all teaching and learning activities as well as other (professional and administrative), therefore it should have suitable institutional and legal frameworks to facilitate these activities, for example, changing the content and methods of teaching and learning; teaching and learning, testing, online assessment, quality accreditation, result recognition...

3. Research Method

The applied methodology includes literature review and questionnaire development, group discussions, online questionnaire survey, and fieldtrip study with face-to-face interviews.

3.1. Methodology

Data collection methods of survey questionnaire, in-depth interview and desk review are going to be employed (Saunders, Lewis, & Thornhill, 2009). The proposed methods aim to gain rich understanding of the processes and contexts of DT in the TVET sector being investigated (Jin, 2003; Robson, 2002). Culture and leadership, legal environment, digital infrastructure, digital human resource, and digital platforms will be key investigated focuses. This research explores the systems of actions as well as individual perspectives of DT in selected TVET partners in Vietnam.

In this research, online survey questionnaires will be appropriately designed and sent to relevant targeted groups of participants anonymously and individually at DVET and 11 supported colleges. Contents of surveyed questions bases on intended research questions and objectives. The ultimate goal is to collect data and information related to impacts, challenges and success factors of DT in various areas: digital human resources, status

quo, strategies and action plans, integrated database systems, regulatory framework and perception at surveyed TVET organizations.

In-depth interviews are conducted with selected participants from the top management level to the implementation level since a holistic DT engages stakeholders at all organizational levels. Interview questions will be designed appropriately to each group. The top management group includes leaders and managers of DVET and TVET institutions, heads of functional and academic departments. Interviews with the top management group are to gain their perceptions of DX as well as broad views on policies and strategic development issues. Meanwhile, interviews with the other group are to investigate issues confronting DX on-site activities.

The desk review method focuses on examining secondary data consists of both written and non-written materials. Written documents include strategies, annual plans and reports of each selected TVET partners. In the meantime, non-written documents consist of video clip, e-learning and information systems etc.

These three data collection methods will be flexibly combined and conducted at each case. The ultimate aim is to gain insights into the processes of DX implementation and a broad view of impact, challenges, success factors pertain to DX in selected TVET institutions that was selected by DVET.

Briefly, the study includes 3 main steps as following:

- Collecting, studying and researching, based on provided documents, materials related to the application of ICT at DVET, TVET institutions and stakeholders,
- Online questionnaire survey and fieldtrip study: Through the research and analysis in the previous step, a questionnaire was built to collect information that has not been expressed through collected documents. The questionnaire was specialized for

different subjects. In addition, the team also conducted surveys at 5 provinces/cities (Hanoi, Yen Bai, Son La, Ca Mau, Kon Tum).

- Collecting and analyzing survey results: After having the questionnaire, GIZ and DVET supported to distribute the questionnaire to stakeholders, and then collect answers. Statistical analysis and data mining methods were applied to analyze the collected data.

The detail information will be presented in the next section.

3.2. Literature review

To develop the online questionnaire, as well as prepare for the fieldtrip study, the consultant team has reviewed the documents provided by DVET, GIZ, including the results of a parallel task: a fact-finding at 11 TVET partner. The review information includes:

- Overview of DVET and its institutions
- Information from fact-finding at 11 partners of GIZ, including: (i) Overview of the institutions (characteristic, function, task, some outstanding performance results in terms of direction, training, student work, facility, external activity, admission result, graduation, training industry/occupation, statistics on the number of students, staffs, etc.); (ii) General development strategy of the institutions (vision, mission, core value, strategic goal, operational plan...); (iii) Current status and strategy of DX (policy, SWOT analysis of DX, status and destination associated with 6 components in the ecosystem of DX).

In addition, the consultant team also gathered and studied additional information through other sources such as websites, supplementary documents.

DVET and TVET program were requested to provide documents related to general information/data, related plans and regulations, GIZ's supporting activities program, The Vietnamese Government's DX policy is related to education in general and vocational education in particular.

3.3. Sharing and group discussion

Several meetings among the consultants, GIZ and DVET was organised in order to present and discuss ideas, to agree on the working plan, and to orient the survey questionnaire.

The consultant that conducted the mission about the DX fact-finding at 11 partners of GIZ, also joined to the meeting. Because, although both missions have different targets, but they have the same orientation in supporting DX in TVET. The coordination between the two parties is necessary, on the one hand to avoid overlapping work between the two parties, and on the other hand to supplement information for each other. After some meetings, the two teams have agreed on some tasks as following:

- Regarding to fieldtrip studies of the fact-finding: they will be performed at 11 partners of GIZ. The questions will focus on issues such as difficulties and suggestions in DX.
- Regarding to fieldtrip studies of the current status research: they will be implemented in other institutions proposed by DVET. The questions will focus on the 6 components of the DX ecosystem and more detailed information.

3.3. Online survey questionnaire

Basically, the questionnaire will be divided into six groups, related to the six major issues that need to be considered in DX in TVET, as mentioned in Section 2.5. DX Ecosystem in TVET sector.

The questionnaire was specialized for three different target groups, as below:

- DVET with two sub-groups : (i) DVET non-IT Staff; (ii) IT Staff,
- Department of Labor - Invalids and Social Affairs,
- TVET institutions with following sub-groups: (i) School-boards; (ii) Functional department, center leaders; (iii) Faculty and its department leaders ; (iv) Teachers; (v) non-IT Staff; (vi) IT Staff; and(vii) Learners.

After agreeing on the content, the questionnaires were put on Google Form so that the online survey could be implemented (See Appendix 4). In addition, to facilitate the distribution and access of the questionnaire, the consultant team used the following tools:

- URL shortener (bit.ly): because the Google Form questionnaire website address is often very long and difficult to remember, the consultant team used bit.ly's address to shorten the questionnaire address.
- Supporting quickly access via QR code: Supporting quickly access for users who use smartphones, or tablets to perform the online survey. The consultant team use QR function of qr-code-generator.com's to encode the website address to support quickly access.

The consultant team created a guidance to support users in doing the survey (see Appendix 1). DVET supported the team in issuing the decision to the Department of Labor - Invalids and Social Affairs and institutions to implement the online survey (See Appendix 2).

3.4. Fieldtrip study

According to the proposal of DVET, the consultant team conducted the fieldtrip studies in 5 provinces and cities (Yen Bai, Son La, Hanoi, Kon Tum,

and Ca Mau) to clearly understand the current situation of DX at some TVET institutions. The detail information, as well as the working schedules are presented in Appendix 2. List of TVET institutions and detailed working plan for fieldtrip studies.

After agreeing on the IOS survey plan and location, DVET supported the consultant team to make official decisions and send them to Department of Labor, War Invalids and Social Affairs to inform the fieldtrip objective and working plan (See Appendix 3).

3.5. Data collection and processing

GIZ and the consultant team manage the online questionnaire pages and the collected results. The responses were collected automatically by Google Form. Collected data and results have been managed by GIZ, the consultant team applied statistical methods, and typical data mining to analyse the result. Due to time limit, the team could not analyze all the collected results from all TVET institutions, so this task was based on the random sampling method, combining some criteria.

4. Activity Results

4.1. Online survey

The survey was began from 9th to 27th April, 2021, in which there are 3 main survey groups: DVET, DOLISA, and TVET institutions.

The questionnaire structure is based on 6 components of the DX ecosystem. The Google platform was used to build the online questionnaire (Google Form) and create a website at <https://giz-tvet.com/3ws6gVI> (Google Site) to introduce the online survey. In addition, the study also used QR codes to support mobile devices, as well as tablets to quickly access the questionnaire. Statistics of the survey participation via the link is shown as following.



Figure 2. Number of click on all questionnaire pages, until 29/04/2021

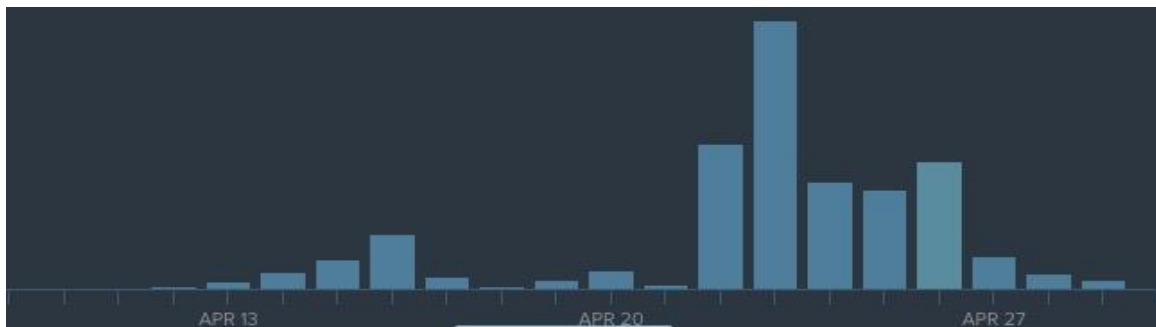


Figure 3. Participation traffic, from 09/04/2021 to 29/04/2021

Statistics of the participation via QR code are detailed as follows

- 3,538 QR code scans to access the survey
- 42.7% of respondents used Android phones/tablets, 41.2% of respondents used iOS phones/ tablets, the remain relates to the other like Windows, Ubuntu, OSX...
- Statistics of respondents from the DOLISA, until 27th April, 2021, as follows.
 - There are 73 respondents from 17 different provinces

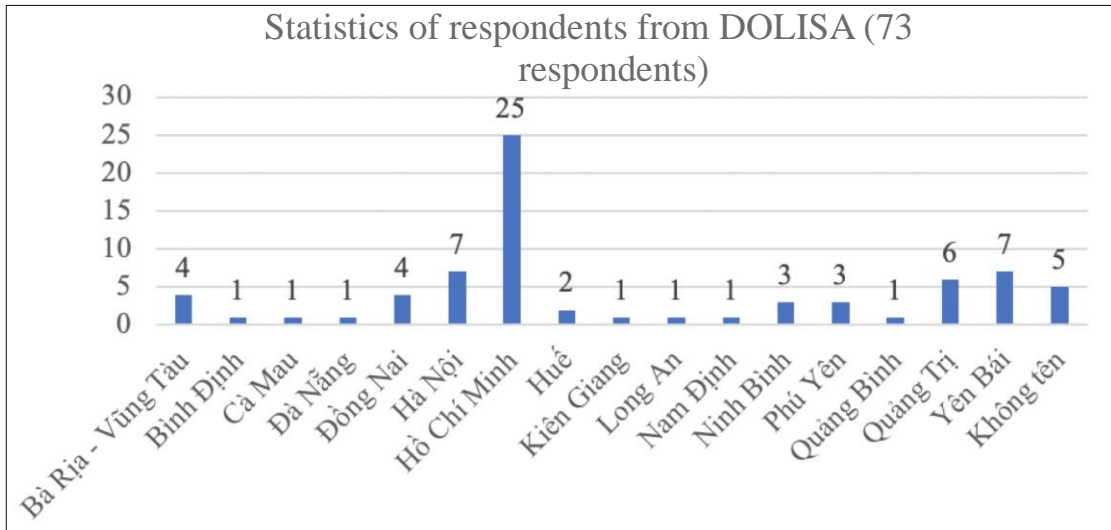


Figure 4. Statistics of respondents from DOLISA

- Regarding to participants: 21.9% of respondents comes from department leaders, 12.3% of respondents is sub-department leaders, 43.8% of respondents is non-IT staff, 21.9% of respondents is IT related staff

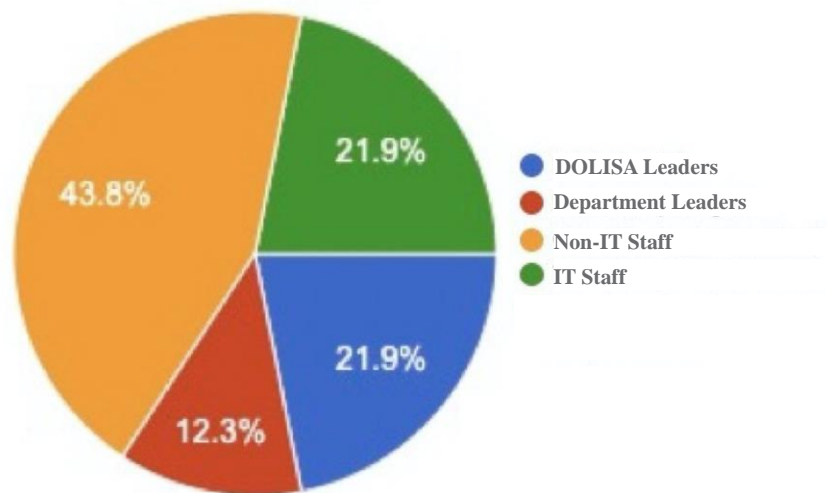


Figure 5. Statistics of respondent coming from DOLISA

- The statistics of respondents TVET institutions up to 27th April, 2021, are shown in Figures 6 and 7, in which:
 - 121 TVET institutions participated the survey, from 30 different provinces
 - 123 respondents from the School Boards.

- 443 respondents from department leaders
- 358 respondents from faculty leaders
- 2108 respondents from teachers
- 953 respondents from non-IT staff
- 60 respondents from IT related staff
- 16,671 respondents from learners, in which there are 2% of respondents are 4nd-year, 1% of respondents are 5nd-year, that can be explained by the fact that the learners have not completed their program in three years, or some wrong answers.

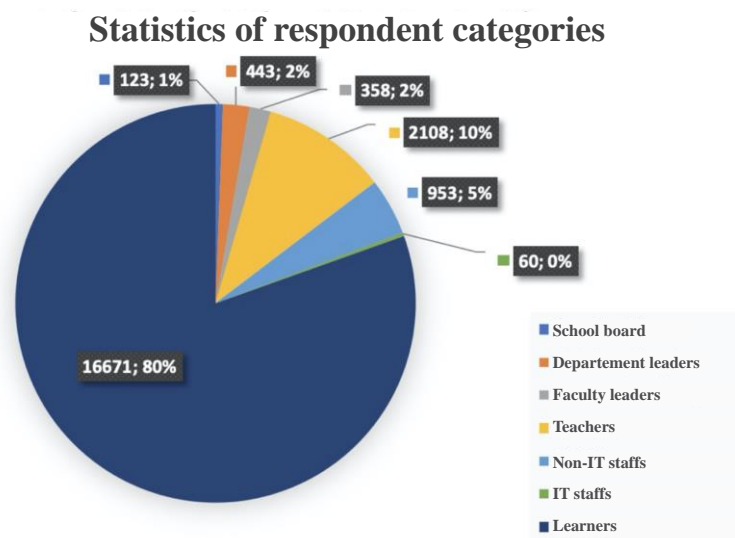


Figure 6. Statistics of respondent categories

In 20.716 respondents, 80% (16.671) of them comes from the TVET learner (see Figure 6. Type of respondent statistics). 20% of respondents comes from the following groups: School boards, including rector and vice rector (1%); Department leaders, including heads and deputy heads of departments such as department of Examination, Training, Finance... (2%); Leaders of faculties, including dean, vice deans of faculties, department, centers, practice workshops, experiments... (2%); Teachers of different faculties (10%); Staff of specialized departments (5%); and IT staffs (60 questionnaires).

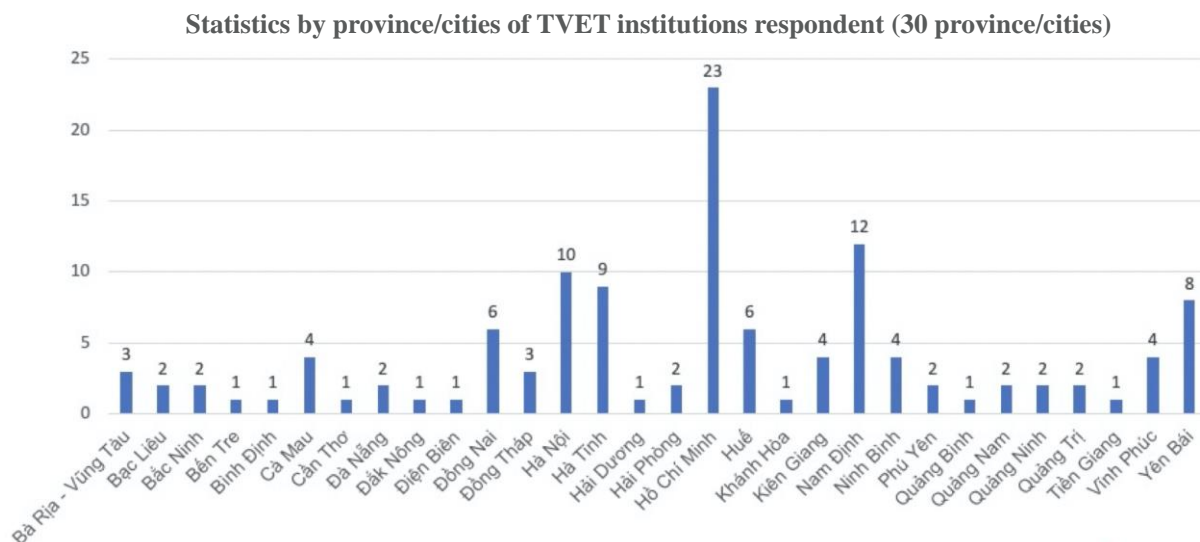


Figure 7. Statistics by province/cities of TVET institutions respondent (30 province/cities)

There are 121 TVET institutions coming from 30 different provinces and cities which participate the online survey (see Figure 7. Statistics by province/cities of TVET institutions respondent (30 province/cities)). In which, Ho Chi Minh City has the greatest number of TVET institutions (23 institutions), and next is Nam Dinh (12), Hanoi (10), Ha Tinh (9) ...

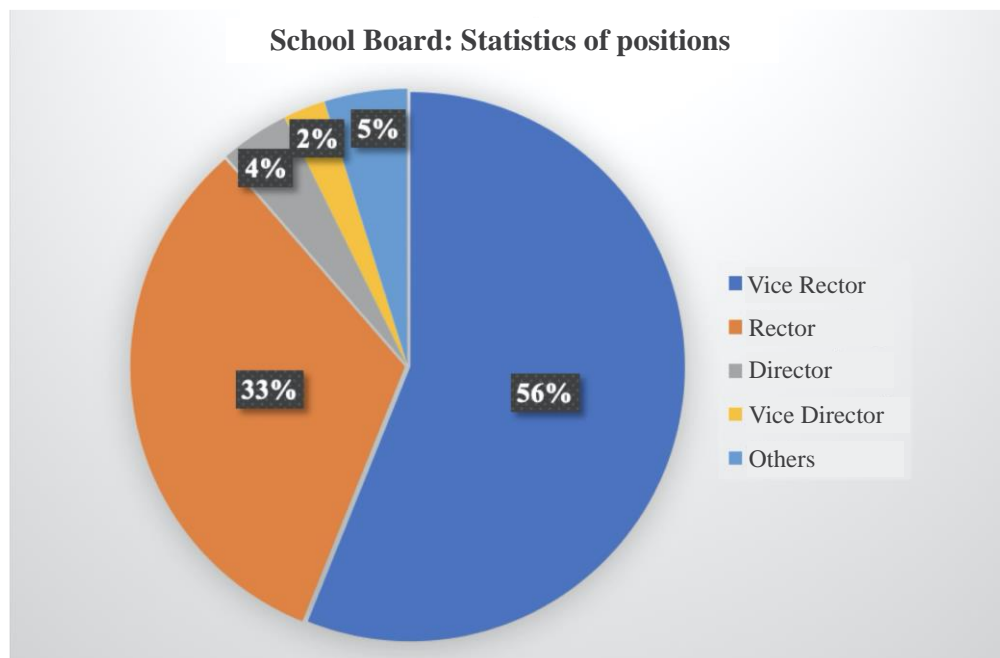


Figure 8. Statistic of respondent by school board position

With the respondent from the School board group (see Figure 8. Statistic of respondent by school board position), there are more than half of them comes from the vice rector (56%, most of them are in charge of training), 33% of them comes from rector, the remain comes from the director (4%), the deputy director (2%), and 5% of respondent did not specify their position.

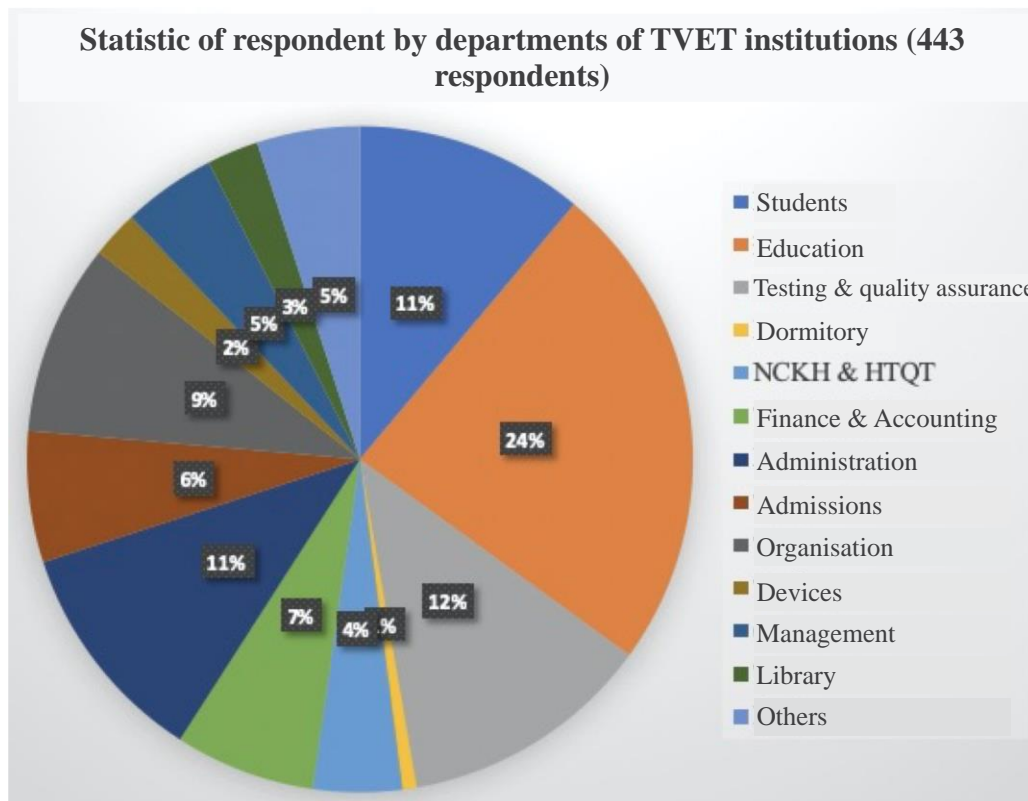


Figure 9. Statistic of respondent by departments of TVET institutions

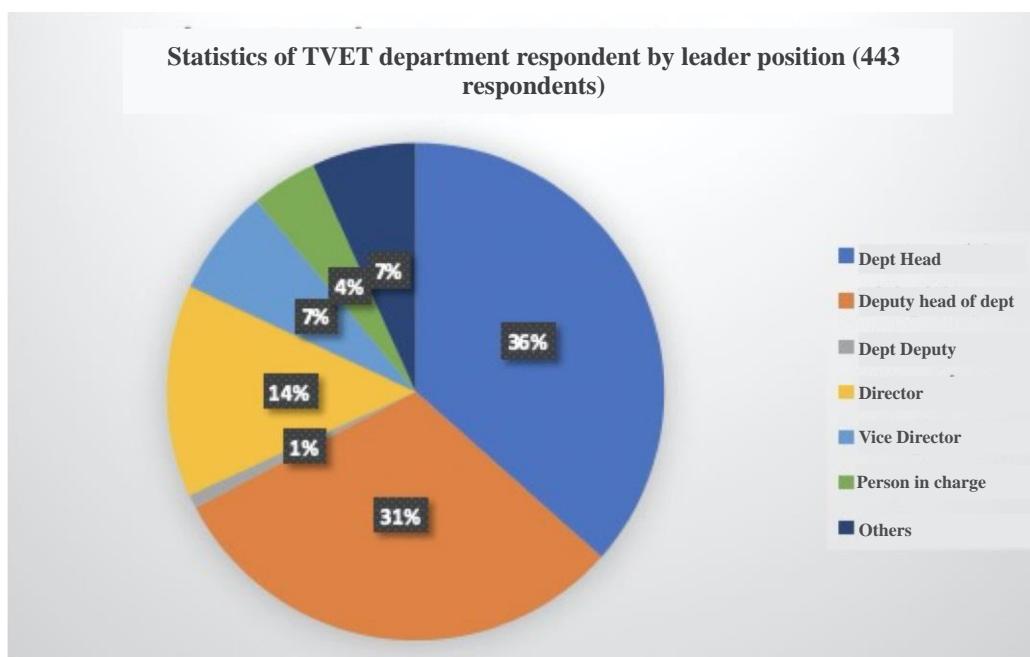


Figure 10. Statistics of TVET department respondent by leader position
 In the total of 443 respondent comes from departmental leaders (see Figure 9. Statistic of respondent by departments of TVET institutions and Figure 10. Statistics of TVET department respondent by leader position), there are 13 departments such as Department of Training, Examination and Quality assurance, students..., 7 group of leader positions such as head, deputy, deputy head, director, deputy director of the center ... In the total of 13 departments, the training department has the greatest number of respondent (24% of respondents come from leaders of the training department), and in 7 positions, the Head and deputy department has the greatest number of respondent (36% and 31%)

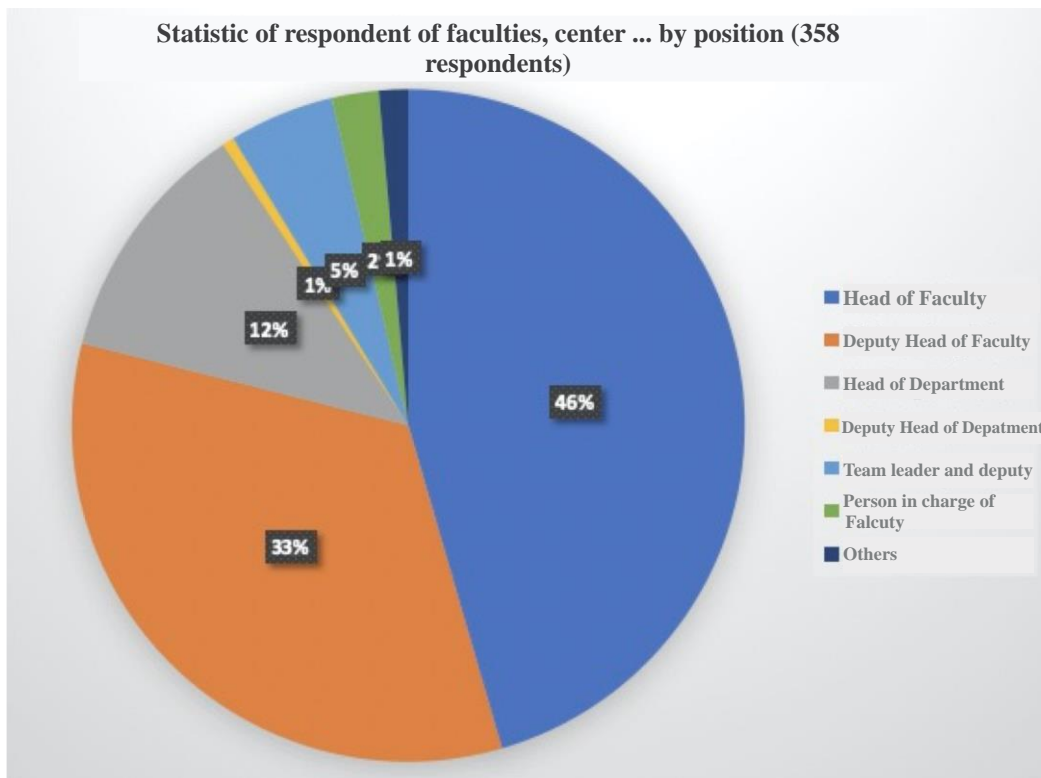


Figure 11. Statistic of respondent from faculties, center ... by position

With 358 respondents from faculties, departments and specialized centers, there is up to 91% of them coming from the dean, dean and head of the departments (46%, 33% and 12% respectively), the remaining (9%) comes from deputy departments (1%), leaders and deputy of centers and workshops (5%), in charge of faculties, departments (2%), and about 1% of respondent did not specify positions.

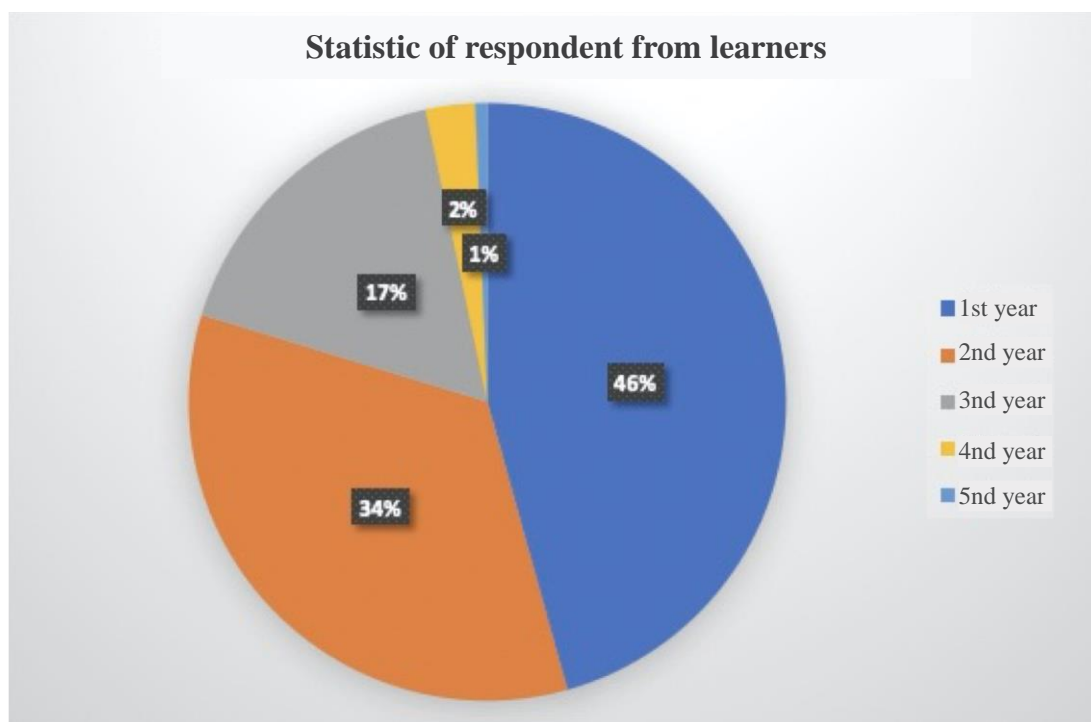


Figure 12. Statistic of respondent from learners

In this survey, learners were the participant that have the greatest number of respondents (16.671 respondents), with 46%, 34%, and 17% of them coming respectively from the 1st, 2nd, and 3rd year learners (97%). There are 3% of respondent announced that they are 4th and 5th year, excluding some virtual respondent, this result was explained that some learners had not completed their program, so it was delayed to 4th and 5th year.

In general, the respondents are diverse and have the participation of all target groups from different regions, conditions, number of learners, industry factors ...

4.2. Fieldtrip study

The fieldtrip studies were conducted from 12th to 23th April, 2021, at 5 provinces and cities (Hanoi, Yen Bai, Son La, Kon Tum and Ca Mau), with the following schedule:

	Timeline	Interview location	TVET institutions

1	Monday, 12th April, 2021	Kon Tum Community College, Kon Tum	1. Kon Tum Community College
2	Thursday, 15th April, 2021	Hanoi Industrial Vocational College	1. Hanoi Industrial Vocational College
3	Saturday, 17th April,2021	Yen Bai Vocational College	1. Yen Bai Medical College 2. Yen Bai Vocational College 3. Polytechnic Yen Bai Intermediate School
4	Tuesday, 20th April, 2021	Son La College, Son La province	1. Son La College of Engineering and Technology 2. Son La Agriculture and Forestry College 3. Son La College 4. Son La Medical College 5. Son La Intermediate School of Arts, Culture and Tourism

4	Friday, 23th April, 2021	Ca Mau Vietnam – Korean Vocational College, Cà Mau	<ol style="list-style-type: none"> 1. Ca Mau Community College 2. Ca Mau Vietnam – Korean Vocational College 3. Ca Mau Medical College 4. Ca Mau Intermediate schools of Economic – Technology
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5. Discussion

In this section, the report will summarize the general statements about status of DX in TVET institutions, accompanying with the results of online survey. These statements are presented around 6 components of the DX ecosystem in TVET. With each component, the report will present important impacts, factors affecting the success and current difficulties of TVET institutions.

Regarding the factors that determine the success of DX in TVET, this study bases on the work of Ho Tu Bao (Bao Ho, 2021): there are three factors that determine the success of digital transformation: (i) People, (ii) Institutions; (iii) Technologies. People need to have enough digital awareness and capacity; The institutional system needs to be suitable and supports to facilitate DX; Technologies needs to respond the needs of specialized DX for each field. With each component of the ecosystem, these three factors will be identified and analysed.

5.1. Education and Training Content

The important impact of DX to education and training content is the appearance of many new knowledge and skill group, especially the knowledge and skill related to IT, automation, ... which lead to the urgent need of change and update. First, it is needs to change the education and training content so that learners can be inclusive and adapt to the new needs of Digital Government, Digital Society and Digital Economy¹. In general, the content and training program of many majors, occupations, and TVET institutions are still outdated and have not met the requirements of the new period. These contents and programs should be reviewed to remove the unnecessary content, and add new necessary knowledge content for the new future. It is necessary to increase the content and knowledge related to digital technology (Automation, IoT ...). Then, the need to change cooperation way with enterprises, so that it becomes closer, deeper and more often. The TVET institutions should enhance the cooperation with technology enterprises. To adapt to the new methods, it is necessary to use using module approaches to design content and program.

The success of DX in Education and Training Content can be decided by following factors:

- Human: Human: The leader of TVET institutions, as well as departments, sub-departments and agencies of TVET have awareness and determine to innovate content, cooperation model with enterprises, as well as restructuring the content and program by a modular way in a scientific way. Regarding to the digital capacity, individuals and organizations participating in the innovation process should be trained to have enough knowledge.

¹ Decision No. 749/QĐ-TTg dated June 03, 2020 of the Prime Minister on approving the national digital transformation program through 2025, with orientations toward 2030

- Institutions: the state management agencies, as well as TVET institutions need to issue suitable legal frameworks, policies to facilitate, encourage the innovation in education and training content.
- Technologies: it should have digital platforms and technologies to support content innovation, such as shared data repositories across industries; adequate digital infrastructure and platform to ensure communication with external partners and enterprises.

In the next section, the report will present the current situations and difficulties of DX in Education and Training Content.

a. Content Innovation

Basically, all survey institutions have identified the importance of education and training content innovation to respond the requirements of the new era (4IR). According to the online survey, 96.7% of the respondent from the school boards, 94.7% of the respondent from the faculty leaders, 90% of the respondent from the lecturers were disseminated this content by their institutions. 96.7% of institutions announced that they are ready to implement DX. However, via the fieldtrip study, the consultant found that the dissemination was often combined with other tasks, an only mentioned with a few sentences, such as disseminating the resolutions of the Party congress, planning meetings...

There weren't any institutions which had organized a separate topic, report or workshop about this content. Therefore, the implementation of content and program innovation (IR4) is still unclear. There were no specific programs and plans that were applied to the whole institutions in a total and comprehensive way. They are usually oriented in a general manner, or is a sub-target among other programs (changing the organizational structure, implementing the task of updating annual curriculum changes...). Current innovation activities are often implemented locally, spontaneously via the

initiative programs of teachers and some engineering faculties, such as initiatives to build simulation programs, IoT models into farming at Son La College; using electronic learning materials of enterprises (Daikin, Electrolux ...) into teaching at the refrigeration department, and at the automotive faculty at Hanoi Industrial College, adding a new Automation module at the Kontum Community College ... However, most of these programs and contents are not copyrighted.

b. Enterprise Cooperation

All institutions have determined the importance of cooperation with enterprises in training students (training by the needs of enterprises, combining with enterprises to train students at institutions, at enterprises...). According to the online survey, 95.8% of the respondent comes from the school board announcing that their institutions had cooperated with external enterprises to support and train the learners. Due to the characteristics of TVET, learners are often sent to the enterprises or outside organizations early (for example, medical, nursing...). However, regarding to the training content, enterprises usually only focus on training/supporting professional knowledge (learning during working, intermeshing) without many contents and skills related to digital skills, 4IR (IT application skills, soft skills, independent thinking skills at enterprises...). There are some good models that can be referred to these issues, for example, Ca Mau Fertilizer Enterprise has organised the soft skill class for the learners of Ca Mau College, at the institutions, before begging their internship at the enterprises.

c. Volume of digital knowledge and skills

There are several institutions that begin to teach IoT, automation subjects/knowledges. According to the online survey, 5.7% of the respondent from the school board reported that their institutions have

renewed the program content to include the IoT and automation knowledge. For example, the Hai Phong Economic and Food Technology College have brought the knowledge and application of IoT, automation in to teaching; the Bac Ninh Economic, Technical and Seafood College have brought the automatic control content into the high-quality training program; Or via the fieldtrips study, Kontum Community College and Hanoi Industrial College have also opened the module that related to automation and IOT. However, it is just a small part of all TVET institutions; these subjects related to the platform for digital transformation such as artificial intelligence, data analysis is still lack. In addition, the volume of Basic Information and Technology course the support basic IT knowledge for all learners, is not enough. It is regulated by Circular 11/2018 / TT-BLĐT BXH, including 75 hours of theory; 15 hours of practice, discussion; 58 hours of exercise; 2 hours of testing. Therefore, after finishing this course the learners still don't have enough basic IT capacity, for example, they cannot use Microsoft Word in a right way to compose, format a document. After finishing the general year, only the learners who follow technology, engineering industries, still continue to learn the subjects related to technology, while the other will not trained any more about this knowledge, for example: the medical industry, the pedagogical industry ...

d. Culture Education

This is a difficult problem for many institutions for now, because they don't have cultural teachers. Therefore, many institutions have to send learners to external cultural teaching institutions, often under the management of Department / Ministry of Education and Training. The coordination among the parties is still difficult. In addition, the management of these learners who are usually about 15 - 16 years old is more difficult. Besides in some places, for example at Kon Tum, many families do not really

support to learn culture. For cultural education, DX is a challenge, but also an opportunity. The challenge is that the learners are too young, they don't have enough knowledge, too young to learn/control the content and skill related to digital technology. The opportunity is that DX can support solution to resolve the lack of cultural teachers, such as the online courses, the lessons on E-Learning system ...

e. Modular Content

Many institutions have deployed the module of content (78% of respondent from the School Board) according to Circular 09/2017 / TT-BLĐT BXH. However, via the fieldtrip study, the consultant found that this task was very formal; the program and content are not re-structured scientifically, and modularly.

5.2. Learning and Teaching Method

The important impact of DX on this component is the appearance of new methods that lead to change and update requirements of the teaching and learning method at TVET institutions. Many digital teachings and learning forms, technologies, platforms are deployed. Thanks to these advances, TVET institutions can resolve many difficulties, such as continuing to teach in Covid-19 pandemic, but they also face issues in using them, especially with teachers and learners. These new methods are often the combination of traditional methods, advanced technology applications and digital learning material on the digital environments. Meanwhile, the current teaching method is usually a one-way form: teachers read/present, learners write, which lack of interaction. Therefore, it does not respond the new demand of DX, especially in difficult situations like Covid-19 pandemic.

The success of DX on Learning and Teaching methods can be decided by the following factors:

- Human: TVET institutions, teachers, learners are trained with new teaching methods such as blended learning, adaptive learning ...
- Institutions: There is a legal platform (regulations, guidelines) to facilitate the implementation of new teaching methods, as well as applying new technologies in teaching and learning, such as online learning, e-learning ...
- Technologies: There are digital technologies, platforms, learning materials that support new teaching methods, for example: tools, online teaching platforms, e-learning, simulation programs ...

In the next section the report will present the current situations and difficulties of DX in Learning and Teaching methods.

a. About applications of digital technologies, learning material in teaching and learning

The institutions have initially applied digital technologies and learning materials in teaching, especially with the technical sectors, such as electrical mechanics, auto ... that have applied the simulation programs, electronic materials coming major enterprises (e.g. Daikin, Electrolux ...), or sponsored (e.g. the Refrigeration electromechanical program that is sponsored by Australia at Hanoi College of Industry). However, it is not popular; and regarding to the interaction between teachers and learners, most of using technologies are only one-way: the teachers employ digital technologies and learning materials for viewing (learners) only!

According to the online survey, 87.8% and 70.7% of teachers apply ICT in theoretical and practical classes, respectively. However, up to 80% of applied IT solutions are using projectors and presentation software (most of them are Microsoft PowerPoint), video demo, images, software ... Many institutions have started digitizing learning materials (see Figure 13. Digital Learning Material rate at survey institutions (according respondent coming

from the school board)); some institutions cooperated with external organizations to use digital libraries, for example, Hanoi Industrial College, community colleges of Kontum (Before 2020) cooperated with TaiLieu.VN However, most of these digital learning materials are just in raw data form such as PDFs, Microsoft Word, Images ... that lack interaction and is not informative.

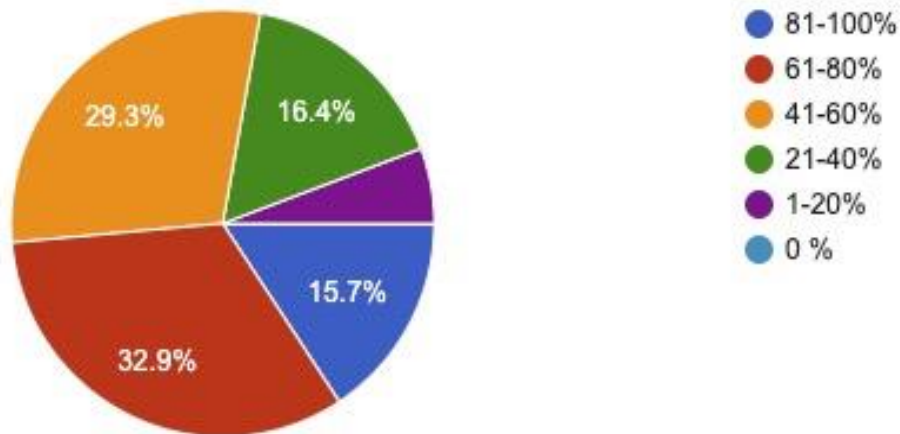


Figure 13. Digital Learning Material rate at survey institutions (according respondent coming from the school board)

b. About online learning and teaching

During the social distancing period due to the Covid-19 pandemic, 69.8% of teachers (1472), 84.4% of learners (14.065) have participated in online teaching with tools such as Zoom, Google Meetings, Microsoft Teams. 69.8% of teachers (1.473) have been trained and guided about online teach. However, there are up to 90.7% of teachers (1.912) who still want to be trained and guided more about online teaching. The institutions face the following problems with online teaching and learning (see Figure 14. Difficulties in online teaching):

- The teachers are only guided to use online teaching tools. They have not been trained much about the online teaching methodology, which

leads to many difficulties in managing, controlling and interacting with learners (50% difficulties in online teaching).

- Teachers and students face many difficulties about infrastructure (42% of the difficulties in online teaching), in which Internet connection and equipment are the most difficulty (70% and 30% of difficulties about infrastructure respectively, such as weak computers, projectors, etc. or weak, unstable, or no connection problems). Many learners do not have computers, so that they must learn via their mobile phone that leads to low teaching effectiveness. Besides, the Internet in many institutions, regions is still weak, especially in remote areas such as Yen Bai and Son La provinces... The Internet connection in these areas is very weak.
- The institutions have difficulty in practice classes, especially in the fields that need practical manipulation such as medicine, agriculture, forestry... (6% of the difficulties in online teaching).
- The remaining difficulties (2%) is about the lack of experience and IT skill in using online tools.

Difficulties in online teaching

- Manage, monitor, interact with learners
- Infrastructure
- Practice, internship, operations
- Others (lack of experience, IT skills ...)

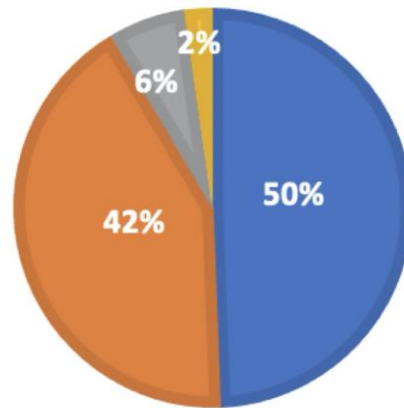


Figure 14. Difficulties in online teaching

c. About e-learning

The number of institutions that implements e-learning is relatively low; and there are only 27%, of teachers (571) was trained, guided the methodologies of e-learning teaching. There are only 22% of teachers (472) who used e-learning systems for their teaching. In this group of teachers, 20% of them was not trained, guided to use the system. There are 86% of teachers (1.817) want to be educated more about e-learning.

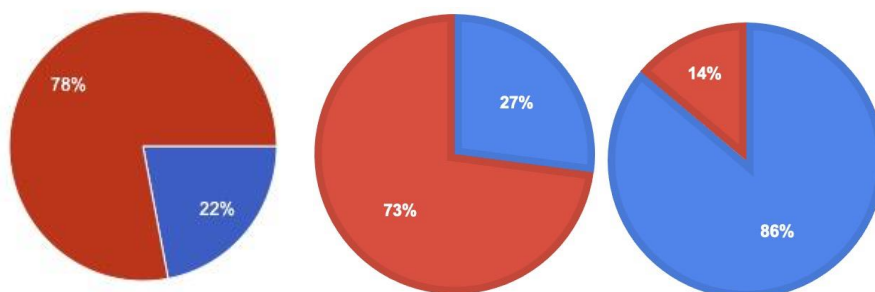


Figure 15. Rate of teachers who have taught by e-learning, been trained using e-learning system, want to be educated more about e-learning (Green: Participated/Trained/Want to be educated more)

d. About adaptive learning

There are 26.4% of institutions (32/121) applied the Adaptive Learning method (analyzing the learner data and instantly adjust the learning and assessment materials) in teaching. However, in 16.671 learners, there are only 69 respondents coming from these institutions who agree on this (was taught based on their capacity). The remain respondent evaluated that they were taught as specified in the curriculum of the subject! Therefore, it can be concluded that the institutions have not really applied adaptive learning methods, or not really understood the nature of adaptive learning.

e. Applications of 4IR in learning and teaching

According to the survey results from the school board, 7/121 institutions have applied data analysis and artificial intelligence to support teaching and learning. However, according to the survey results from learners of the above institutions, 91.4% of the respondents assess that the content of knowledge teaching completely follows the existing program and curriculum. Basically, it can be concluded that the institutions participated in the survey have not really applied the technologies of the 4IR to improve teaching and learning. This fact was also clearly shown via the results of fieldtrip study in 5 provinces: some institutions have data on learners, including after graduating (for example, Hanoi Industrial College), however they still don't know how to exploit it.

5.3. Digital Infrastructure, Platform and Learning Material

In DX process, all information and knowledge are digitized, exploited and operated on the digital environment, therefore the impact of DX on Infrastructure, Platform and Learning Material is the most clearly. First, (i) the overloading of digital infrastructure leads to the need of update the

infrastructure; (ii) the specialization of the digital platform to respond specific needs of teaching and learning (for example, supporting by industry, by job...) leads the need to have right orientations for digital platform teams; (iii) the diversity of learning materials (see also section 2.1. Some basic concepts for more information about digital learning materials) leads to the difficulties of content creators, but also facilitates learners in accessing the content.

The success of DX in Infrastructure, Platform and Learning Material:

- Human: It must have enough human resources to deploy, operate technical and data infrastructures. The teachers, learners and related stakeholders have sufficient qualify to use digital platforms, sufficient competent to create digital learning materials. In addition, the participation of stakeholders in the development, sharing of digital learning platforms and materials is also an important factor in the success of DX.
- Institutions: having a legal framework to facilitate buying equipment for infrastructure, mechanisms and policies to encourage everyone participate in building digital platforms and learning materials.
- Technologies: Technical infrastructure, data infrastructure must be enough and stable to ensure smooth connection, safely and permanently store and data. The digital platform must respond to the needs of teaching and learning in the digital environment.

In the next section, the report will present the current situation and difficulties of DX in Infrastructure, Platform and Learning Material.

a. Computer and Network Infrastructure

- Most of staffs at the institutions are provided computers to their work (88% or 838 staff), most of which are connected internet (95% of computers, or 905 computers (including several self-equipped computers)). The teachers often have to self-equip their own computers (93% of teachers or 1.951). There are 93% of staffs (883) respond that the current computer is suitable for their work. However, via the fieldtrip study, the current network and computer infrastructure was invested heterogeneously, in different periods, projects and programs. Therefore, if they move to digital environment, they will not respond to all requirements.
- The institutions do not have enough computers for learners. The computer labs (if any) usually is shared for many classes in a day. Only 57% of learners (9.496) have a computer for their learning.

b. Data Infrastructure for Teaching, Learning and Digital Learning Material

51 institutions have electronic store/database of learning material, or software for teaching. 25 institutions cooperate, or buy/use academic data from domestic and foreign publishers, such as Tailieu.vn, Springer, Library, Hanoi Open University. ... However, in fact, these learning materials are still simple that is usually in form of scanned documents or Microsoft Word. There are also some institutions, industries such as electromechanical, auto of Hanoi Industrial College... who apply simulation programs, and electronic learning materials of enterprises (e.g. Daikin, Electrolux . . .), or sponsored (e.g. the Refrigeration electromechanical program that is sponsored by Australia for Hanoi College of Industry). However, this number is still low and most of them are not copyrighted.

c. Interoperability

The interoperability between the systems, applications of departments is still limited (more than 60% of respondents from the school board evaluated that their systems poorly interoperate). The functional departments cannot share data with each other via their systems. A typical example is that salaries and overtime payment of teachers in many institutions must be calculated by Microsoft Excel although they already have an accounting software.

d. Security

No many institutions take care about safety and security in the digital environment. The available solutions are quite simple, for example, only install anti-virus software on workstations; using free anti-virus software, even on servers (51.4% of institutions have centralized anti-virus systems, 56.9% of institutions have firewall systems), so many critical issues about security can be happened for TVET institutions. As a typical example, the server of Son La College was hacked and many information was encrypted, during the time of fieldtrip studies at this institution.

5.4. Digital Teacher and Learner

Teachers and learners are the decisive factors for DX in TVET, because they are the people who will directly implement and concretize changes in content and methods (Bao Ho, 2021). Therefore, changing teaching, learning methods and working environment are the important impacts of DX on teachers and learners. Several new teaching and learning methods were proposed for DX in education and training, such as adaptive learning, blended learning, teacher acting as a coach... Therefore, teachers and learners should be trained more to adapt to these new learning styles. In addition, teaching and learning are more and more moved to computer-based and internet-connected digital environment, with many supporting platform systems, such as online teaching during the Covid-19 epidemic

situation. Besides many advantages such as saving time, easier access to learning resources, this new working environment creates some difficulties in in getting used to new methods and environments.

The success of DX for Teachers and Learners can be decided by followings factors:

- Human: teachers and learners have enough capacity in applying new methods, and in using digital technologies to support teaching and learning.
- Institutions: it should have legal frameworks that regulate and guide teachers and learners in applying new methods and digital platforms in teaching and learning. In addition, policies encouraging teachers and learners in DX are also an important factor.
- Technologies: having adequate infrastructures and technologies to support teachers and learning, such as online teaching and learning technologies, e-learning; connection and data infrastructure ...

In the next section, the report will present the current situations and difficulties of Teachers and Learners in DX.

a. Learners

In all fieldtrip institutions, learners are agile in using new digital technologies (On a scale of 1 (*the lowest*) to 5 (*the highest*), 71% of teachers assess *the capacity of IT application of their learner from 3-5*). In 84.4% (14.065) of learners who have participated in online learning, no one have any difficulties in using technologies (*the difficulties are usually only about network, and understanding content*). Most of the learners find out the materials from Internet by themselves (92.7% of learners or 15.460). However, learners' awareness about DX is not good (*only 49.4% of learners have heard of DX, but 75.1% of them have heard of 4IR*).

b. Teachers

90% of the teachers had been propagated about the 4IR, about DX. But through the fieldtrip study, the propaganda is just in form of orientation, the teachers have not received any formal training about DX and pedagogical methods in the digital environment. The number of teachers who was trained about and performed e-learning is relatively low (Only 26.7% of teachers was trained about e-learning). Most teachers still teach in the traditional way such as reading (teachers) and writing (learners), curriculum-based teaching (only 66.6% of teachers assess themselves using curriculum-based teaching, but 86.2% of learners assess their teachers using curriculum-based teaching method). (See also section 5.1. Teaching and learning methods).

5.5. Digital Administration and Management

DX creates new working methods and environments that are more efficient for the administration and management, but also exposes several challenges for TVET institute managers, as well as staffs, and teachers. Thanks to digital infrastructures and shared connection platforms, these institutions have an additional communication channel for faster and more convenient managements and operations. In addition, when everything is digitized, connected, shared and interacted, a lot of educational data will be collected. This data will enable an accurate, suitable governance, planning, organization, leadership, management, forecasting, and decision-making. However, leaders, and staffs should have enough digital capacity and equipment as well to use and exploit these infrastructure, platforms and data.

The success of DX in administration and management can be decided by followings factors:

- Human: Leaders and staffs involved in educational administration and management should be aware of the DX effectiveness and determined

in DX. Besides, having enough digital capacity in the new environment is also an important factor for success in DX.

- Institutions: It should have legal frameworks to facilitate the educational administration and management in the digital environment, such as recognizing the legitimacy of direction and administration through a sharing and connection platform.
- Technologies: The application of connection, sharing and data collection technologies as well as advanced technologies in artificial intelligence for data mining is a decisive factor for success in DX.

In the next paragraphs, the report will present the current situation and difficulties of DX in administration and management.

a. Awareness

All institutions are aware of the importance of using technologies in administration and management; the IT application rate in this task is relatively high:

- 80% of institutions usually use electronic working schedule,
- 80% of institutions usually use electronic meeting invitation,
- 78% of institutions usually use electronic documents for meetings,
- 88% of institutions usually use electronic form for reporting,
- 77.8% of institutions usually use digital sign for their work (internal and external),
- 80% of institutions apply ICT for communication, direction, guidance from school boards to other departments, and centers.

b. IT application

Most of functional departments have been equipped software systems for their works:

- 62.5% of institutions use software systems for administrative management,
- 68.1% of institutions use software systems for document management and administration
- 50% of institutions use software systems for specialized records management
- 58.3% of institutions use software systems for document managements
- 61.1% of institutions use software systems for human resource management
- 79.2% of institutions use software systems for accounting – finance – asset management

c. Interoperability

However, there is a prominent issue related to the interoperability. These software systems often cannot communicate with each other and with external systems. There are several reasons for this situation, as follows:

- Some software systems were provided by agencies/originations ... from vertical sectors, so they can interoperate only with systems in the correspondent sector, not with other ones. Therefore, the communication of many systems in institutions is difficult. For example, it is difficult to share and integrate information and data among the employee management system of the Department of Home Affairs, the document management system of the Provincial People's Committee, the asset management system of the Department of Finance....

- Some procured software systems are closed solutions, lack interoperability, unable to extend or require additional investment to extend.

5.6. Institutional and Legal Framework

Requirements for Digital Transformation affect institutional and legal frameworks, and vice versa institutional and legal frameworks affect the Digital Transformation process. Digital transformation has made several TVET related institutional and legal frameworks obsolete, unable to meet practical requirements. Changes are needed to facilitate the success of Digital Transformation (see also Section 2.5. DX Ecosystem in TVET sector), for example: *Changing content, teaching and learning methods in the digital environment; Teaching, learning, testing, online assessment, quality examination, result recognition; Regulations on recognition and certification of fully online learning; Regulations on modularization and mutual recognition of certificates and credits; Regulations on copyright, intellectual property, personal information safety, sharing and exploitation of databases and digital data warehouse* (Bao Ho, 2021).

The followings are statistics on the current situation and difficulties about the institutional and the legal framework in DX.

- a. 67% of respondents from the school board assess that there is not enough legal basis for their institute in changing content and methods of teaching and learning in the digital environment.
- b. 78% of the responses from the school board assess that there is not enough legal basis for their institutions to perform teaching, learning, testing, online assessment, quality examination, and recognition of results in the digital environment. Most of the proposals are related to specific guidance circulars, especially in the recognition of learning results and assessment through the digital environment.

- c. 72.1% of the responses from the School Boards assess that there is not enough legal basis for their institutions to process issues related to copyright, intellectual property, personal information security, database sharing and exploitation, digital data warehouse.
- d. Some provinces have programs and plans on DX (63.9% of the responses from the school board), but only a few institutions receive (or will be) supports, guidance and orientation from that (40.6% of respondent).

Regarding the issue of shared electronic learning materials: Institutions are eager to have shared electronic learning materials that specified for different disciplines. But many of them are still afraid to share learning materials. There should be mechanisms and policies to encourage teachers to participate in sharing learning materials soon.

6. Recommendations

Basically, the respondent and their organization are aware of the importance of DX. This awareness has been significantly increased, with the supports from recent policies, decisions and programs. However, most of them do not have the necessary knowledge about DX, especially how to deploy DX. In addition, a common weakness of TVET institutions is that the infrastructure conditions are not enough, outdated and heterogeneous.

Based on the previous analysis and discussion, the next section presents some important recommendation to overcome these current issues, and to succeed in DX in TVET. The recommendations are also organized around the 6 components of the DX ecosystem.

About Education and Training Content, DVET and TVET institutions should:

1. have specific programs and plans on innovating educational content to meet the needs of the new era.

2. improve digital technology-related content for learners; cooperate with enterprises to train learners not only about professional knowledge, but also necessary skills for DX, for 4IR within the enterprise itself.
3. develop, implement, or cooperate with stakeholders to apply e-learning for cultural education (9+).
4. scientifically and modularly structure the content and educational program.

About Learning and Teaching Method, DVET should

1. improve supporting its institution advanced learning method, such as blended learning, flipped learning methods, in which priority is given to implementing two-way interactive solutions between teachers and learners. DVET should take advantage of the available solutions of enterprises to save time and costs.
2. improve supporting its institution online teaching and e-learning, for example training online teaching and e-learning pedagogical methods; taking advantage of open source e-learning solutions such as the Moodle platform to deploy to all institutions; support infrastructure to deploy solutions...
3. support and guide institutions in applying the 4IR technologies to mine available data for effective teaching and learning methods.

About Digital Infrastructure, Platform and Learning Material,

1. One of the popular requirements that all respondents mentioned is that it is necessary to update network and computer infrastructure synchronously, to meet the requirements of DX.

2. To ensure interoperability, DVET should host to build shared systems among DVET, institutions and other stakeholders.
3. DVET should exploit advantage of the available electric learning material solutions of enterprises to save time and costs.
4. DVET should support institutions solutions for information safety and security.
5. DVET and TVET institutions should diversify the types of digital learning materials, to allow learners to access the education content easier.

About Digital Teacher and Learner

1. It should orientate and guide learners in learning in the digital environment.
2. It is necessary to organize courses to educate teachers pedagogical methods in the digital environment. Furthermore, it is recommended to use pedagogical certificates in the digital environment.

About Administrations and Management (Please refer to Digital Infrastructure, Platform and Learning Material for more information)

1. It should standardize the systems and infrastructure used in management and administration to enhance the interoperability between departments. The e-government model, legal frameworks, and available data sharing platforms can be used to overcome this problem.
2. It should apply advanced methods in governance and management, such as Data-driven Decision Making, building a shared system from the local to DVET etc.

About Institutional and Legal Framework

1. DVET should issue soon circulars, guidelines that clarify and facilitate its institutions in implementing DX.
2. DVET should develop encouraging policies to motivate its institutions, staff, lecturers and others who have great contributions/ideas for DX in TVET sector.

7. Conclusion

In Vietnam, the DX concept is just popular recently, and thus there no many researches about current status of DX in different sectors. This report, with the support from TVET Program and DVET, can be considered as the first reports that present the current status of Digital Transformation in TVET in Vietnam.

Several methods have been applied to conduct this research such as literature review, desk study, group discussion, online survey and fieldtrip study. To ensure the overall and comprehensiveness of the research, 3 main stakeholders in TVET sector has been defined: DVET, DOLISA and TVET institutions.

To review the different aspect of DX in TVET sector, this study applied the DX ecosystem proposed by professor Ho Tu Bao. The ecosystem contains 6 components that allow to cover all important issues of DX in TVET. Based on this ecosystem, the questionnaire for online survey and the fieldtrip study was developed and conducted. To conduct the online survey for all TVET institutions across the whole country, advanced online support systems were used, such as Google's survey tool, QR Code.

The online questionnaire survey was conducted in April 2021, with the participation of 20,716 people from different target groups, belonging to 123 educational institutions, 17 Departments of Labor and Invalids and Social Affairs (LOLISA) and General Directorate of Vocational Education and Training. In the same time, the fieldtrip study was also carried out at 14 TVET institutions in 5 provinces/cities (Hanoi, Son La, Yen Bai, Kon Tum and Ca Mau).

From the results of the above steps, the report has made observations in 6 issue groups and recommendations for DX in TVET with specific evidences. The six observations include: (1) the limitation and ambiguity of digital content innovation at TVET institutions - it should have a clearer plan to reform education and training content; (2) wide usage of outdated

teaching and learning methods - it should deploy new and advanced methods on the digital environment soon (such as blended learning, flipped learning...); (3) lack of infrastructure, platforms, digital learning materials, they need to be upgraded and diversified to meet the needs of DX; (4) teachers and learners need to be supported and trained to improve their capacity in DX; (5) administration and management limits to IT application, it is necessary to apply more strongly data-based decision-making methods; (6) many difficulties in DX implementation due to the unclear institutional and legal framework, it should issue circulars and guidelines for TVET institutions in the DX implementation soon.

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9. Annex

Annex 1. Instructions for conducting online surveys

Mỗi đối tượng khảo sát sẽ có một bộ câu hỏi riêng, Dưới đây là liên kết để truy cập, tham gia việc khảo sát:

<https://giz-tvet.com/3ws6gVI>

Hoặc anh chị có thể truy cập qua mã QR code sau (sử dụng máy ảnh trên điện thoại thông minh chụp mã QR code, điện thoại sẽ hiện liên kế để truy cập):



Sau khi truy cập vào liên kết anh chị thực hiện các bước sau:

1. Đầu tiên, hệ thống sẽ hiển thị một số thông tin về cuộc khảo sát, **và các bảng câu hỏi khảo sát dành cho các đối tượng khác nhau.** Anh chị cần click vào liên kết tương ứng với vị trí vai trò của mình tại đơn vị.
2. Khi đã truy cập vào được các bảng câu hỏi, anh chị cần điền thông tin nhân khẩu học. Do yêu cầu đảm bảo thông tin riêng tư, nên anh chị không cần phải nhập thông tin về họ tên.
3. Sau khi nhập xong phần thông tin nhân khẩu học, anh chị sẽ được chuyển sang phần hỏi khảo sát.

Mỗi bộ câu hỏi có thể có nhiều phần khác nhau (có một số bộ câu hỏi không được chia phần), kết thúc mỗi phần anh chị cần nhấn nút Next để chuyển sang phần tiếp theo. Anh chị cũng có thể xem lại/chỉnh sửa câu trả lời của phần trước bằng cách nhấn nút **Back**.



Hình 1. Nút Next và Back cho phép chuyển qua lại giữa các phần
Mỗi bộ câu hỏi sẽ có 3 nhóm câu trả lời chính:

- Dạng Có/Không: với câu hỏi dạng này, anh chị chỉ được chọn 1 trong 2 hoặc nhiều câu trả lời tương ứng, như hình dưới

10. Trường anh chị có kho/Cơ sở dữ liệu về học liệu, tài nguyên học tập như giáo trình, sách tham khảo điện tử hay không *

Có

Không

Không biết

- Dạng câu hỏi có nhiều lựa chọn: anh chị có thể chọn nhiều đáp án phù hợp

13. Anh chị có thể truy cập sử dụng kho/Cơ sở dữ liệu ... về học liệu, tài nguyên học tập như giáo trình, sách tham khảo điện tử từ đâu (Có thể chọn nhiều câu trả lời phù hợp) *

Chỉ từ một số máy tính cụ thể (ví dụ ở thư viện, trung tâm dữ liệu)

Bất cứ đâu trong mạng nội bộ trường

Từ mạng Internet

- Với câu hỏi dạng điền số (tỷ lệ %, số lượng ...) anh chị cần nhập số tương ứng vào
- Với dạng câu hỏi mở: anh chị cần nhập thông tin theo mô tả theo yêu cầu của câu hỏi, như hình dưới

2. Anh/chị cho biết các trong việc giảng dạy, anh chị có định hướng gì để đảm bảo người học tiếp xúc, làm quen với những yêu cầu cuộc cách mạng công nghiệp lần thứ tư/nền kinh tế 4.0 hay chưa *

Anh/chị có thêm tham khảo thêm về Cách mạng Công nghiệp 4.0 và hàm ý tại Việt Nam tại đây https://www.ilo.org/wcmsp5/groups/public/---asia/--ro-bangkok/--ilo-hanoi/documents/publication/wcms_630855.pdf

Your answer

Sau khi hoàn thành tất cả câu hỏi ở các phần, anh chị cần nhấn nút Submit để hoàn thành phần khảo sát và chuyển câu trả lời về trung tâm.

A rectangular button with a purple gradient background and the word "Submit" in white text.

Hình 2. Nút Submit để kết thúc phần khảo sát

Annex 2. List of TVET institutions and detailed fieldtrip plan

Ở mỗi tỉnh sẽ có một số trường tham gia khảo sát thực địa, thông tin như sau:

- Tỉnh Yên Bái: (1) Trường Cao đẳng Y tế Yên Bái; (2) Trường Cao đẳng nghề Yên Bái; (3) Trường Trung cấp Bách Khoa Yên Bái
- Tỉnh Sơn La: (1) Trường Cao đẳng Kỹ thuật công nghệ Sơn La; (2) Trường Cao đẳng Nông Lâm Sơn La; (3) Trường Cao đẳng Sơn La; (4) Trường Cao đẳng y tế Sơn La; (5) Trường Trung cấp văn hóa nghệ thuật và du lịch Sơn La
- Thành phố Hà Nội: Trường Cao đẳng Công nghiệp Hà Nội
- Thành phố Kon Tum: Trường Cao đẳng Cộng đồng Kon Tum
- Tỉnh Cà Mau: (1) Trường Cao đẳng Cộng đồng Cà Mau; (2) Trường Cao đẳng nghề Việt Nam - Hàn Quốc Cà Mau; (3) Trường Cao đẳng y tế Cà Mau; (4) Trường Trung cấp Kinh tế - Kỹ thuật Cà Mau

Kế hoạch làm việc chi tiết tại các tỉnh được thể hiện qua bảng sau:

	THỜI GIAN	NỘI DUNG	THÀNH PHẦN
1	09h00 - 09h30	- Gặp mặt lãnh đạo các CSGD - Giới thiệu thành phần tham dự, mục đích và chương trình làm việc - Phỏng vấn, trao đổi trực tiếp với các lãnh đạo CSGD	- Lãnh đạo các CSGD - Nhóm chuyên gia tư vấn
2	09h40 - 10h10	- Gặp mặt lãnh đạo phòng, ban của các CSGD - Phỏng vấn, trao đổi trực tiếp với lãnh đạo các phòng ban	- Lãnh đạo phòng, ban của các CSGD - Nhóm chuyên gia tư vấn

3	10h20 - 10h50	- Gặp mặt lãnh đạo khoa, trung tâm chuyên môn của các CSGD - Phỏng vấn, trao đổi trực tiếp với lãnh đạo khoa, trung tâm chuyên môn của các CSGD	- Lãnh đạo khoa, trung tâm chuyên môn của các CSGD - Nhóm chuyên gia tư vấn
4	11h00 - 11h30	- Gặp mặt cán bộ phụ trách các vấn đề CNTT của các CSGD - Phỏng vấn, trao đổi trực tiếp với cán bộ phụ trách các vấn đề CNTT của các CSGD	- Các cán bộ phụ trách vấn đề CNTT của các CSGD - Nhóm chuyên gia tư vấn
11h40 - 13h30 Nghỉ trưa			
5	13h30 - 14h00	- Gặp mặt giáo viên của các CSGD - Phỏng vấn, trao đổi trực tiếp với giáo viên của các CSGD	- Giáo viên của các CSGD - Nhóm chuyên gia tư vấn
6	14h10- 14h40	- Gặp mặt cán bộ, công nhân viên của các CSGD - Phỏng vấn, trao đổi trực tiếp với cán bộ, công nhân viên của các CSGD	- Cán bộ, công nhân viên của các CSGD - Nhóm chuyên gia tư vấn
7	14h50 - 15h30	- Gặp mặt học viên của các CSGD - Phỏng vấn, trao đổi trực tiếp với học viên của các CSGD	- Học viên của các CSGD - Nhóm chuyên gia tư vấn
8	15h30 - 16h30	Tham quan CSGD	Đại diện CSGD và tư vấn

Annex 3. Online survey decisions

BỘ LAO ĐỘNG - THƯƠNG BINH
VÀ XÃ HỘI
TỔNG CỤC GIÁO DỤC NGHỀ NGHIỆP

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Số *617*/TCGDNN-VP
Khảo sát thực trạng chuyển đổi số
trong giáo dục nghề nghiệp

Hà Nội, ngày *09* tháng *04* năm *2021*

Kính gửi: Sở Lao động - Thương binh và Xã hội các tỉnh, thành phố trực thuộc Trung ương

Thực hiện Nghị quyết 01/NQ-CP ngày 01/01/2021 của Chính phủ về nhiệm vụ, giải pháp chủ yếu thực hiện kế hoạch phát triển kinh tế - xã hội và dự toán ngân sách nhà nước năm 2021 trong đó giao Bộ Lao động - Thương binh và Xã hội xây dựng Đề án chuyển đổi số và dạy học trực tuyến trong giáo dục nghề nghiệp trong năm 2021. Để có căn cứ đề xuất các nhiệm vụ, giải pháp cho đề án, Tổng cục Giáo dục nghề nghiệp phối hợp với Tổ chức hợp tác phát triển Đức (GIZ) tiến hành khảo sát thực trạng ứng dụng công nghệ thông tin và chuyển đổi số tại các Sở Lao động - Thương binh và Xã hội và các cơ sở giáo dục nghề nghiệp. Phiếu khảo sát được đăng tải trên Cổng thông tin điện tử của Tổng cục tại địa chỉ <http://gdnn.gov.vn> hoặc tại địa chỉ: <https://giz-tvet.com/3ws6gVI> Tổng cục Giáo dục nghề nghiệp đề nghị các Sở Lao động - Thương binh và Xã hội:

1. Triển khai việc khảo sát đến cán bộ công chức thuộc Sở và Diễn thông tin vào phiếu khảo sát đầy đủ, đúng đối tượng theo nội dung của phiếu khảo sát để có thông tin hữu ích nhất trong việc xây dựng đề án.

2. Chỉ đạo, hướng dẫn các cơ sở giáo dục nghề nghiệp trên địa bàn tham gia khảo sát đầy đủ, đúng thành phần theo hướng dẫn;

(Hướng dẫn phiếu khảo sát kèm theo)

Thời hạn thực hiện khảo sát đến hết ngày 22/4/2021.

Thông tin cần hỗ trợ liên hệ TS. Nguyễn Trọng Khánh – Chuyên gia tư vấn của GIZ, ĐT: 0912314482 hoặc Văn phòng Tổng cục Giáo dục nghề nghiệp, ĐT: 0243.9/40333 (số máy lẻ 602), Email: tk.gdnn@molisa.gov.vn.

Nơi nhận:

- Như trên;
- Tổng cục trưởng (để b/c);
- Lưu: VT, TT-TT.

KT. TỔNG CỤC TRƯỞNG
PHÓ TỔNG CỤC TRƯỞNG



Phạm Vũ Quốc Bình

Annex 4. Fieldtrip study decisions

BỘ LAO ĐỘNG - THƯƠNG BINH
VÀ XÃ HỘI
TỔNG CỤC GIÁO DỤC NGHỀ NGHIỆP

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Số: 584 /TCGDNN-VP

Hà Nội, ngày 01 tháng 4 năm 2021

V/v phối hợp, hỗ trợ hoạt động khảo sát nhu cầu
chuyển đổi số tại các cơ sở giáo dục nghề nghiệp
trên địa bàn

Kính gửi: Sở Lao động - Thương binh và Xã hội Tỉnh Cà Mau.....

Thực hiện nhiệm vụ Thủ tướng Chính phủ giao xây dựng Đề án chuyển đổi số và dạy học trực tuyến trong giáo dục nghề nghiệp; Tổng cục Giáo dục nghề nghiệp phối hợp với Cơ quan hợp tác phát triển Đức (GIZ) tổ chức đoàn công tác khảo sát thực trạng chuyển đổi số tại các cơ sở giáo dục nghề nghiệp trên địa bàn. Đoàn công tác gồm đại diện Tổng cục Giáo dục nghề nghiệp, các chuyên gia của GIZ, các chuyên gia về chuyển đổi số.

1. Thời gian: 01 ngày, bắt đầu từ 09h00, ngày 23... tháng 4... năm 2021

2. Địa điểm: Trụ sở CPN Việt Nam - Hàn Quốc Cà Mau.....

3. Nội dung: Khảo sát thực trạng, nhu cầu chuyển đổi số của địa phương, cơ sở giáo dục nghề nghiệp.

Tổng cục Giáo dục nghề nghiệp trân trọng đề nghị Quý Sở cử Lãnh đạo Sở tham dự và mời đại diện UBND tỉnh/thành phố; Sở, ngành liên quan; các cơ sở giáo dục nghề nghiệp cùng tham dự. [Signature]

Nơi nhận:

- Như trên,
- Tổng cục trưởng (để lưc),
- GIZ (để phối hợp);
- Lưu: VT, TT-TT.

KT. TỔNG CỤC TRƯỞNG
PHÓ TỔNG CỤC TRƯỞNG



Phạm Vũ Quốc Bình

BỘ LAO ĐỘNG - THƯƠNG BINH
VÀ XÃ HỘI
TỔNG CỤC GIÁO DỤC NGHỀ NGHIỆP

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Số: 584 /TCGDNN-VP

Hà Nội, ngày 07 tháng 4 năm 2021

V/v phối hợp, hỗ trợ hoạt động khảo sát nhu cầu
chuyển đổi số tại các cơ sở giáo dục nghề nghiệp
trên địa bàn

Kính gửi: Sở Lao động - Thương binh và Xã hội *tỉnh Kon Tum*.....

Thực hiện nhiệm vụ Thủ tướng Chính phủ giao xây dựng Đề án chuyển đổi số và dạy học trực tuyến trong giáo dục nghề nghiệp; Tổng cục Giáo dục nghề nghiệp phối hợp với Cơ quan hợp tác phát triển Đức (GIZ) tổ chức đoàn công tác khảo sát thực trạng chuyển đổi số tại các cơ sở giáo dục nghề nghiệp trên địa bàn. Đoàn công tác gồm đại diện Tổng cục Giáo dục nghề nghiệp, các chuyên gia của GIZ, các chuyên gia về chuyển đổi số.

1. Thời gian: 01 ngày, bắt đầu từ 09h00, ngày *12* tháng *4* năm 2021

2. Địa điểm: *Trường Cao đẳng Công nghệ Kon Tum*.....

3. Nội dung: Khảo sát thực trạng, nhu cầu chuyển đổi số của địa phương, cơ sở giáo dục nghề nghiệp.

Tổng cục Giáo dục nghề nghiệp trân trọng đề nghị Quý Sở cử Lãnh đạo Sở tham dự và mời đại diện UBND tỉnh/thành phố; Sở, ngành liên quan cùng tham dự. *ng*

Nơi nhận:

- Như trên;
- Tổng cục trưởng (để b/c);
- GIZ (để phối hợp);
- Lưu: VT, TT-TT.

**KT. TỔNG CỤC TRƯỞNG
PHÓ TỔNG CỤC TRƯỞNG**



Phạm Vũ Quốc Bình

BỘ LAO ĐỘNG - THƯƠNG BINH
VÀ XÃ HỘI
TỔNG CỤC GIÁO DỤC NGHỀ NGHIỆP

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Số: 584 /TCGDNN-VP

Hà Nội, ngày 07 tháng 4 năm 2021

V/v phối hợp, hỗ trợ hoạt động khảo sát nhu cầu
chuyển đổi số tại các cơ sở giáo dục nghề nghiệp
trên địa bàn


Kính gửi: Sở Lao động - Thương binh và Xã hội tỉnh Sơn La.....

Thực hiện nhiệm vụ Thủ tướng Chính phủ giao xây dựng Đề án chuyển đổi số và dạy học trực tuyến trong giáo dục nghề nghiệp; Tổng cục Giáo dục nghề nghiệp phối hợp với Cơ quan hợp tác phát triển Đức (GIZ) tổ chức đoàn công tác khảo sát thực trạng chuyển đổi số tại các cơ sở giáo dục nghề nghiệp trên địa bàn. Đoàn công tác gồm đại diện Tổng cục Giáo dục nghề nghiệp, các chuyên gia của GIZ, các chuyên gia về chuyển đổi số.

1. Thời gian: 01 ngày, bắt đầu từ 09h00, ngày ...20... tháng .4.. năm 2021

2. Địa điểm: ...Tỉnh lỵ... Cao đẳng... Sơn La.....

3. Nội dung: Khảo sát thực trạng, nhu cầu chuyển đổi số của địa phương, cơ sở giáo dục nghề nghiệp.

Tổng cục Giáo dục nghề nghiệp trân trọng đề nghị Quý Sở cử Lãnh đạo Sở tham dự và mời đại diện UBND tỉnh/thành phố; Sở, ngành liên quan; các cơ sở giáo dục nghề nghiệp cùng tham dự. 

Nơi nhận:

- Như trên;
- Tổng cục trưởng (để b/c),
- GIZ (để phối hợp);
- Lưu: VT, TT-TT.

KT. TỔNG CỤC TRƯỞNG
PHÓ TỔNG CỤC TRƯỞNG




Phạm Vũ Quốc Bình

BỘ LAO ĐỘNG - THƯƠNG BINH
VÀ XÃ HỘI
TỔNG CỤC GIÁO DỤC NGHỀ NGHIỆP

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Số. 584 /TCGDNN VP

Hà Nội, ngày 07 tháng 4 năm 2021

V/v phối hợp, hỗ trợ hoạt động khảo sát nhu cầu
chuyển đổi số tại các cơ sở giáo dục nghề nghiệp
trên địa bàn


Kính gửi: Sở Lao động - Thương binh và Xã hội tỉnh Yên Bái.....

Thực hiện nhiệm vụ Thủ tướng Chính phủ giao xây dựng Đề án chuyển đổi số và dạy học trực tuyến trong giáo dục nghề nghiệp; Tổng cục Giáo dục nghề nghiệp phối hợp với Cơ quan hợp tác phát triển Đức (GIZ) tổ chức đoàn công tác khảo sát thực trạng chuyển đổi số tại các cơ sở giáo dục nghề nghiệp trên địa bàn. Đoàn công tác gồm đại diện Tổng cục Giáo dục nghề nghiệp, các chuyên gia của GIZ, các chuyên gia về chuyển đổi số.

1. Thời gian: 01 ngày, bắt đầu từ 09h00, ngày ...17... tháng ...4... năm 2021

2. Địa điểm: Trụ sở Cao đẳng nghề Yên Bái.....

3. Nội dung: Khảo sát thực trạng, nhu cầu chuyển đổi số của địa phương, cơ sở giáo dục nghề nghiệp.

Tổng cục Giáo dục nghề nghiệp trân trọng đề nghị Quý Sở cử Lãnh đạo Sở tham dự và mời đại diện UBND tỉnh/thành phố; Sở, ngành liên quan; các cơ sở giáo dục nghề nghiệp cùng tham dự. 

Nơi nhận:
- Như trên;
- Tổng cục tư vấn (đề b/c),
- GIZ (để phối hợp);
- Lưu: VT, TT-TT.

KT. TỔNG CỤC TRƯỞNG
PHÓ TỔNG CỤC TRƯỞNG



Phạm Vũ Quốc Bình

Research report on status of digital transformation in TVET in Vietnam was designed and developed within the framework of the Program Reform of Technical Vocational Education and Training in Vietnam, German Corporation for International Cooperation GmbH (GIZ), authorized by the German Federal Ministry of Economic Cooperation and Development (BMZ) in collaboration with the Vietnam Directorate of Vocational Education and Training.