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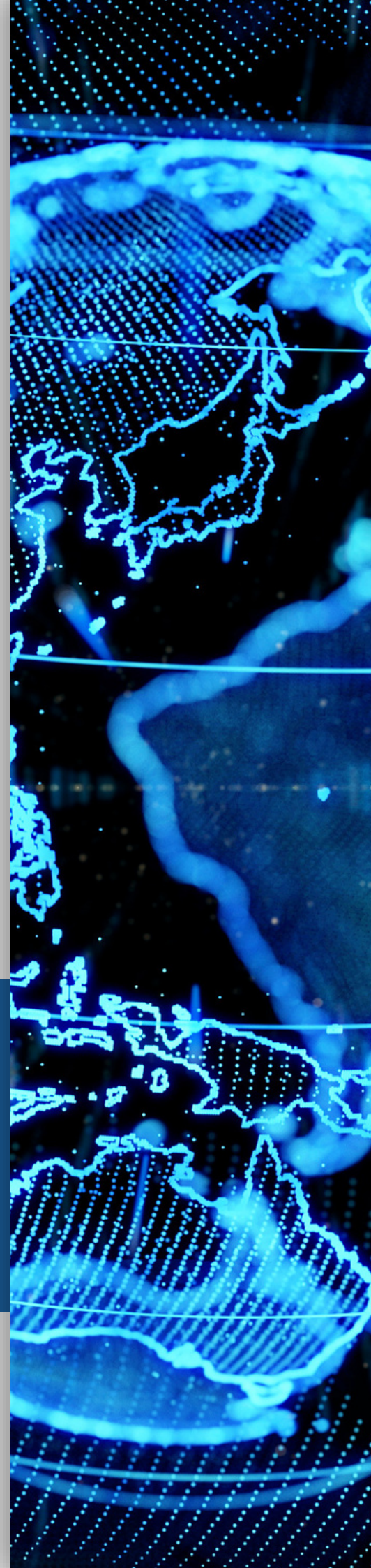


TỔNG CỤC GIÁO DỤC NGHỀ NGHIỆP
DIRECTORATE OF VOCATIONAL EDUCATION AND TRAINING

REPORT

POLICY REVIEW ON THE IMPLEMENTATION OF DIGITAL TRANSFORMATION IN THE TVET SECTOR OF VIETNAM

Hanoi, November 2021



General Information

This document was developed with the support of the Vietnam-Germany Cooperation Program "Program Reform of Technical Vocational Education and Training in Vietnam". The program is authorized by the German Federal Ministry of Economic Cooperation and Development (BMZ), implemented by the German Corporation for International Cooperation GmbH (GIZ) in collaboration with the Directorate of Vocational Education and Training, under the Ministry of Labour, Invalides and Social Affairs. The program aims at an enhanced, better aligning TVET in Vietnam to the changing world of work, towards a greener and digitized future.

Program Reform of Technical Vocational Education and Training in Vietnam

No. 1, Lane 17 Ta Quang Buu, Hai Ba Trung District, Hanoi

T: +84 24 397 46 571

E: office.tvet@giz.de

W: www.tvet-vietnam.org/ www.giz.de

Coordinating Organization:

Program Reform of Technical Vocational Education and Training in Vietnam

MSc. Pham Xuan Hoan

Ms. Nguyen Nguyet Linh

Collaborating Organization:

Directorate of Vocational Education and Training 11 partner TVET colleges of GIZ

Group of Compiling:

GIZ's Consultants

Prof. Dr. Ho Tu Bao

Dr. Nguyen Nhat Quang

MSc. Bui Thu Trang

**German Corporation for International
Cooperation GmbH, GIZ**
Program Reform of TVET in Vietnam

**Directorate of Vocational Education
and Training**

**REPORT ON
POLICY REVIEW ON THE IMPLEMENTATION OF
DIGITAL TRANSFORMATION IN THE TVET
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First version

Hanoi, November 2021

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Address: No. 1, Lane 17, Ta Quang Buu Street, Bach Khoa Ward, Hai Ba Trung District, Hanoi, Vietnam

Tel: +84 (0) 24 39 74 64 71

Website: www.tvet-vietnam.org

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ABBREVIATIONS

Seq.	Abbreviation	Explanations
1.	AI	Artificial intelligence
2.	BMZ	German Ministry of Economic Development and Cooperation
3.	Cir.	Circular No.
4.	Dec.	Decision No.
5.	DoLISA	Department of Labour, Invalids and Social Affairs
6.	DVET	Directorate of Vocational Education and Training
7.	DX	Digital Transformation
8.	IT	Information technology
9.	GIZ	German Corporation for International Cooperation GmbH
10.	LO	Learning Outcomes
11.	MIC	Ministry of Information and Communications
12.	MOET	The Ministry of Education and Training
13.	MoLISA	The Ministry of Labour, Invalids and Social Affairs
14.	TVET	Technical Vocational Education and Training

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SUMMARY

National digital transformation (DX) in general and DX in Technical Vocational Education and Training (TVET) in particular is a well-established trend. In order to implement the “National Program on Digital Transformation” promulgated in Decision No. 749/QĐ-TTg dated 06/03/2020, the Directorate of Vocational Education and Training (DVET) developed the DX Project of TVET (hereby called “the Project”). At the time of writing this report, the Project has been sent for review by the ministries, receiving comments and finalized to be submitted to the Government for promulgation; expectedly the activities shall be initiated in early 2022.

One of the important components of the Project is modifying the regulatory framework for TVET activities to align with the implementation of other components in the DX ecosystem in TVET. This is quite complex and requiring the participation of the whole TVET system: the DVET, Departments of Labors, Invalids and Social Affairs (DoLISA), TVET institutions across the nation. To prepare for this important and complex activity, DVET conducted the “Policy review on the implementation of DX in the TVET sector of Vietnam” in October - November 2021, with the support of GIZ.

This report presents findings of the research conducted at TVET institutions – including 11 TVET colleges supported by GIZ – in 10 cities/provinces of Vietnam as well as discussions with leaders from DVET, agencies under DVET and discussions with experts and representatives from enterprises. A thorough review of the regulatory framework for TVET is complex and it’s really difficult to identify all problems, especially future ones. Yet with the helpful support of all stakeholders, the research team has made a tremendous effort to point out the most significant issue in each component of DX in TVET as well as recommend solutions. The recommendations concern documents issued by DVET, issues that needs to be presented to the Ministry of Labour, Invalids and Social Affairs (MoLISA) and other Governmental Ministries for modification, as well as suggestions for TVET institutions to adjust their regulations and internal regime in order to prepare for DX in their activities in the coming years. We hope that the report would provide useful insights for DVET and stakeholders in refining the regulatory framework in general and DX in TVET in particular.

On this occasion, the research team would like to thank for the cooperation and support of DVET, GIZ, cities/provinces, TVET institutions and enterprises who participated in this research.

1. GENERAL INTRODUCTION

1.1. The Programme “Reform of TVET in Vietnam”

The Programme “Reform of TVET in Vietnam” (the TVET Programme) was authorized by the German Federal Ministry for Economic Cooperation and Development (BMZ), implemented by the German Corporation for International Cooperation GmbH (GIZ) in collaboration with the Directorate of Vocational Education and Training (DVET), under the Ministry of Labour, Invalides and Social Affairs (MoLISA). The programme aims at an enhanced, better aligning TVET in Vietnam to the changing world of work, towards a greener and digitized future. It serves three outputs:

- Output 1: State actors, TVET staff, TVET institutes and the business sector are interconnected thanks to digital technologies.
- Output 2: The regulatory framework of TVET is aligned to the requirements of the changing world of work.
- Output 3: The concept of High-Quality TVET institutes is successfully implemented in selected TVET institutes.

1.2. Context analysis

1.2.1. Digital transformation in TVET in Vietnam



Figure 1: Six components of the DX ecosystem (Ho Tu Bao, Nguyen Nhat Quang, 2021)

Digital transformation (DX) has become an inevitable trend. It has a holistic impact and brings in new business models, products and services to any organization. The Government of Vietnam has developed a regulatory framework to guide the implementation of DX. Among the legal documents, Decision No. 749/QD-TTg dated 06/03/2020, Directive No. 24/CT-TTg dated 05/28/2020 and Decision No. 942/QD-TTg dated 06/15/2021 by the Prime Minister are of crucial importance. In the TVET sector, DX may compel a new way of management, administration as well as learning and teaching. In addition, due to the changing world of work, increased autonomy and competitiveness in education, as well as the COVID-19 pandemic, TVET institutes need to initiate DX to develop a more adaptive, flexible, open, and responsive training system to rapidly cope with external factors.

DX is regarded as one of two breakthrough solutions in the draft Development Strategy of Vocational Education for the period 2021 - 2030, with a vision to 2045. In 2021, the DVET has finalized the draft strategic project of DX in TVET and is calling for comments, opinions from ministries. Expectedly, the project shall be submitted to

the Government for promulgation in late 2021. The project was developed based on a DX ecosystem in TVET that consists of six components:

- Education and training content
- Teaching and learning methods
- Teachers and students
- Digital infrastructure, platforms and learning resources
- Digital administration and management
- The regulatory framework

The ecosystem contributes to promoting a holistic and consistent approach to DX in TVET among key stakeholders: the DVET, DoLISA, TVET institutions, enterprises, industry associations, GIZ, domestic and foreign international cooperation partners.

In 2021, the TVET Programme has collaborated with DVET to conduct a number of researches on the status of DX in the TVET sector of Viet Nam; for instance, the fact-finding mission at 11 partner TVET colleges of the TVET Programme, the large-scale online survey on the status of DX in the TVET sector in Vietnam, educational activities to raise awareness and enhance knowledge of DX; DX strategic counseling for TVET institutions.

Research findings have revealed an urgent need to conduct a policy review related to DX in TVET to prepare for synchronization with the general DX process.

1.2.2. The regulatory framework for DX in TVET in Vietnam

Among six components of the DX ecosystem, the regulatory framework plays an essential role. DX, in essence, is a change in the way of working while the way a system works - including the TVET system - is decided by the regulatory framework, particularly the legal system and related sub-law documents. The remaining five components also rely on relevant regulatory framework. Based on this standing, an insightful analysis of existing regulatory documents to unearth factors hindering the development of DX as well as possible challenging problems in the future, mechanisms and policies supporting DX to proactively make modifications and addition is very important.

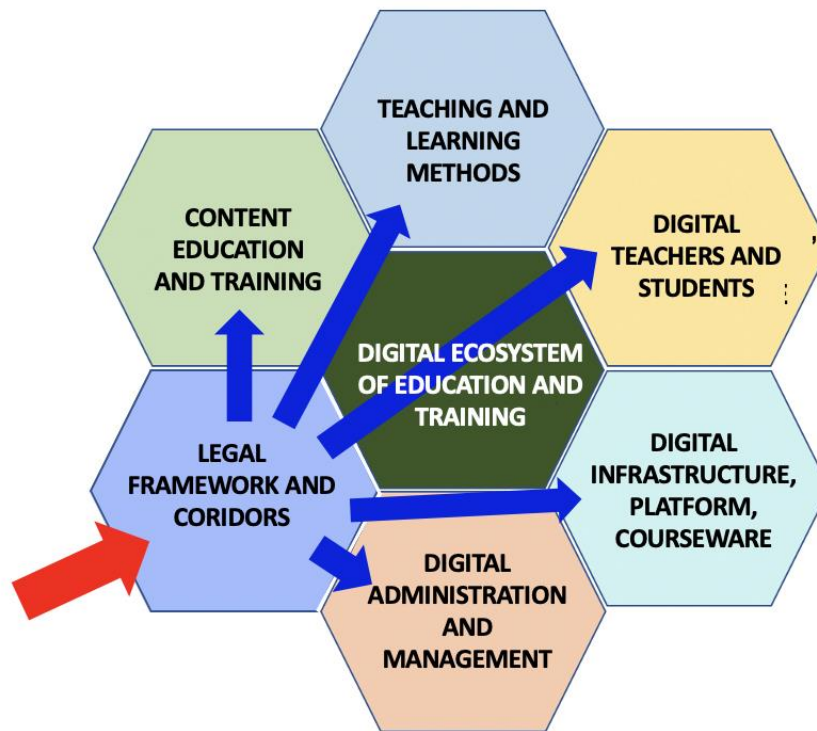


Figure 2: Relationship between regulatory framework and 5 components of the DX ecosystem

1.3. Reasons for the implementation of the activity

Until now, there has been no official and in-depth research on policy review of the regulatory framework for DX in TVET in Vietnam. Therefore, this activity aims at the provision of a systematic analysis of the regulatory framework related to six components of the DX ecosystem in TVET for the DVET, TVET institutions and stakeholders. The research systematizes the documents, points out policy gaps related to DX, then makes recommendations to modify policies and legal regulations for a more effective implementation of DX activities in TVET.

1.4. Purposes of the activity

Modifying the regulatory framework to facilitate the formulation of DX in the large, important field of TVET is extremely complex and needs to be done with care. Within a research with time constraint and limited resources, we do not aim at thoroughly addressing the issue but just want to initiate a continuous and prolonged process.

In order to get the whole picture of the regulatory framework for DX in TVET, we recommend setting the overall objective “have a deeper understanding of the current

regulatory framework to advise necessary changes for a better implementation of DX in TVET in Vietnam”. In particular, specific objectives are:

- Understand and identify challenges and constraints in the regulatory framework regarding current activities of DX in TVET
- Understand and identify challenges and constraints in the regulatory framework regarding components of the DX ecosystem in TVET
- Recommend necessary modifications and additions to the regulatory framework to serve DX activities of TVET in the immediate future.

1.5. Research questions

To realize the objectives, this research answers the overall question “How to build a regulatory framework that would facilitate the implementation of DX in the TVET sector of Vietnam?”. In particular, the following questions are further addressed:

- How is the current regulatory framework relevant and effective to the implementation of DX in the TVET sector of Viet Nam?
- Which topics and aspects are missing in existing policy documents that need to consolidate?
- Which new policies, regulations and laws are needed to enhance the effectiveness of DX activities in the TVET sector of Vietnam?
- What are challenges and successful factors associated with the formulation and reinforcement of the regulatory framework to the implementation of DX in the TVET sector of Viet Nam?
- What are key lessons learnt, recommendations, or policy advice to promote the implementation of DX in the TVET sector of Viet Nam?

1.6. Research methodology

The research employed various research methods such as desk review, group discussion, consultation meeting, in-depth interview, and online survey questionnaire to collect quantitative and qualitative data and information. Consultants conducted intensive reviews of the existing regulatory framework documents related to the six components of the DX ecosystem in TVET. For this, TVET regulations, laws and policies are relevant. Moreover, other policies, for example on investment, labour relations and general education, were considered carefully where they are relevant for DX in TVET. Consultation meetings, group discussions and in-depth interviews were

conducted with participants from DVET, provincial departments, TVET institutions, enterprises, and related organizations.

1.6.1. Desk review

Consultants conduct intensive reviews of the system of the regulatory framework and documents:

- Laws and sub-laws promulgated by Government or other policies, for example on investment, labour relations and general education related to DX in TVET;
- Existing regulatory documents promulgated by the MoLISA or DVET, including:
 - o Regulations and policies (circulars, directives, official dispatches...) related to TVET.
 - o Regulations and policies (circulars, directives, official dispatches...) related to the six components of the DX ecosystem in TVET;
- TVET institutions' regulations and policies

1.6.2. In-depth interviews

The first activity is in-depth interviews with leaders and staff of DVET. The participants are representatives from Department of Formal Training, Department of Continuing Training, Department of Teacher Affairs, Department of Student Affairs, Department of Occupational Skills, Vocational Education and training Accreditation Agency, Department of Planning and Finance, Department of Physical Facilities and Equipment, Department of Legal Affairs - Inspection, DVET Office and National Institute of Vocational Education and Training.

The in-depth interviews were organized before group discussions at 10 cities/provinces. They aim to find out legal problems/issues that will be discussed in group discussion.

1.6.3. Group discussions

Group discussions were conducted with selected and targeted participants (leaders and staff) from provincial DoLISA, TVET institutions (colleges, intermediate schools, elementary schools, centers for TVET and continuing training), enterprises, and industry associations from 10 cities/provinces, including Ha Noi, Bac Ninh, Ha Tinh, Hue, Nha Trang, Ninh Thuan, Ho Chi Minh City, Dong Nai, An Giang, Long An.

The purpose of group discussions is to find out the current situation and legal difficulties of provincial departments, TVET institutions, enterprises, and industry associations during the implementation of DX in TVET. At group discussions, the consultants listened to their suggestions for improving and adjusting policies that still cause difficulties.

The group discussions were conducted according to the following workplan:

- GIZ consultant states the purposes of the discussion
- Representatives present legal challenges, constraints during the implementation of DX in TVET institutions and make recommendations
- The consultants ask questions to find out further about the current situation and gather ideas and recommendations from representatives.

The open group discussions are conducted with all participants for best results.

1.6.4. Online survey

Qualitative and quantitative data from online survey questionnaires is needed to supplement qualitative analysis and assessment. Online questionnaires were designed specifically for each participant: representatives of DVET, DoLISA; TVET institutions and enterprises from 63 cities/provinces.

1.6.5. Consultation meeting

Consultation meeting was conducted after the consultants had completed the preliminary activity report in order to present key findings of activities to all participants of the in-depth interviews, group discussions, leaders of TVET and those who are interested in the research. Moreover, consultation meeting helps the consultants collect ideas/comments to finalize the final report.

1.7. Activity summary

The review of the regulatory framework for DX in TVET officially took place in 2 months (10/01/2021 – 11/28/2021).

In order to consolidate awareness and provide information on the direction, purposes and workplan of the regulatory framework review, the first conference was held in the 13th October 2021. The participants included representatives of the director board, staff from DVET, 10 DoLISA, TVET institutions and industry associations; who were also participants of in-depth interviews and group discussions.

Next up, the consultants conducted in-depth interviews with leaders and staff of DVET, including DVET leaders, leaders and staff from 12 Agency/Department/Institute under DVET.

From the 18th to the 29th of October 2021, the consultants conducted 10 group discussions with representatives (leaders and staff) from DoLISA, TVET institutions, enterprises, and industry associations from 10 cities/provinces, including Ha Noi, Bac Ninh, Ha Tinh, Hue, Nha Trang, Ninh Thuan, Ho Chi Minh City, Dong Nai, An Giang, Long An.

In parallel with the group discussions in 10 cities/provinces, from the 18th to the 29th of October 2021, the consultant group sent out online survey questionnaires to 63 cities/provinces. Over 1,200 responses were collected, compiled and analyzed to be used as proof for the statements in this report.

After conducting in-depth interviews, group discussions and online survey, the consultants compiled data, conducted review meetings, compiled report and made recommendations for DVET, GIZ, TVET institutions and related organizations. Research findings were presented in a conference held on the 23th November 2021 to the leaders of DVET, representatives from GIZ, participants of the activities and those who are interested in the research. After the conference, the consultant received comments and finalized the final report.

The final research findings were distributed to TVET institutions, GIZ programs, domestic and foreign organizations for reference.

2. CURRENT SITUATION OF THE REGULATORY FRAMEWORK FOR DX IN TVET

From 2017 until now, the system of legal documents related to TVET has been revised, systematized and essentially covered all issues related to TVET practices. This system was designed based on the current operating methods, mainly direct training. Issues concerning IT application in teaching and management have also been mentioned. Some content related to online teaching and training has updated guidance as part of the distance training efforts. Digital competency requirements for learners were partially introduced in Informatics – one of six mandatory and consistent subjects in the whole system.

The implementation of the legal document systems and related guiding documents has unveiled some problems, constraints that need to be addressed. The Covid-19 pandemic has stimulated online learning and teaching into rapid implementation on a large scale. This process has also made the issues more noticeable and modifications become more urgent, in order to increase the adaptability and resilience of the TVET system in case the pandemic prolongs, and potential similar challenges in the future.

A new issue arising in 2020 is the promulgation of the national DX strategy according to Dec. 749/QD-TTg dated 06/03/2020, requiring all levels and industries, including the TVET sector, to develop and implement their own DX project. The fundamental change was the role of IT, from a tool in teaching, learning and management, evolved into an organic component of the whole TVET system. Industrialization 4.0, the world digital transformation as well as the Government's efforts to build a digital government, digital economy and digital society are also posing a significant pressure on the TVET system to transform so as to adapt to the new environment and contribute to the Government's efforts.

The system of legal documents related to TVET from a DX ecosystem point of view is shown in Figure 3.

The documents are classified into five groups which are five components of the DX ecosystem in TVET (except the regulatory framework):

1. Education and training content
2. Teaching and learning methods
3. Teachers and students
4. Digital infrastructure, platforms and learning resources

5. Digital administration and management

The model shown in Figure 3 visually demonstrates the relationship between realistic issues and relevant documents, and are bound to become an important tool employed in this research.

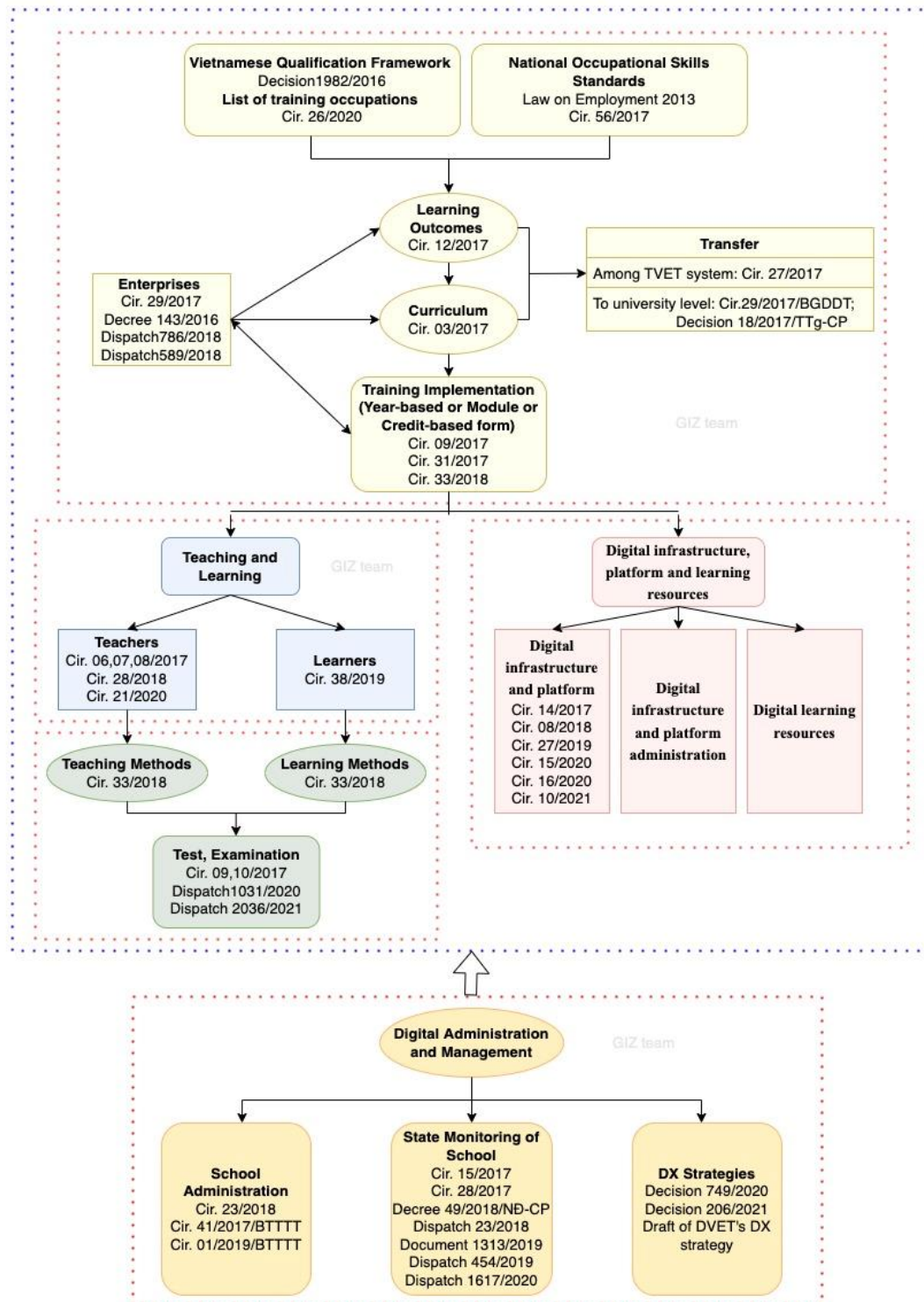


Figure 3: Regulatory framework of 5 components of the DX ecosystem

Next up are problems, constraints and content to be added to the current regulatory framework with regard to each component in the general model.

2.1. Education and training content

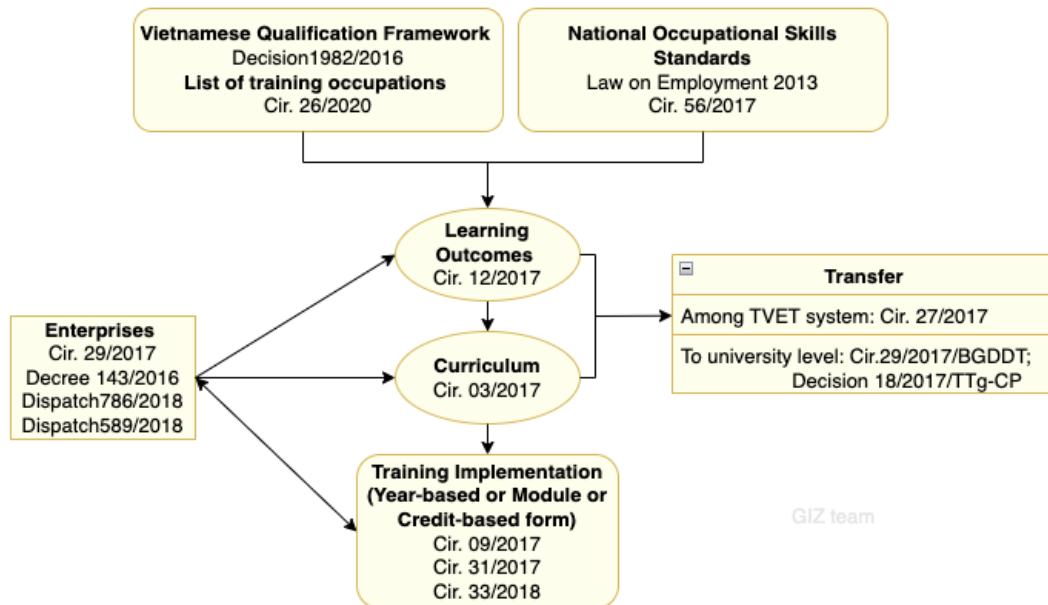


Figure 4: Regulatory framework of Training and education content

Education and training content is one of the most important components of DX in TVET. The overall requirement is that the curriculum must reflect the changing requirements of the labour market under the influence of industrialization 4.0 and national DX. The National DX Program 749 emphasized, having adequate skilled labours is a must for the development of the digital economy. Not only higher education and training, but the TVET sector is also responsible for achieving this goal.

In order to meet these requirements, legal documents need to be modified and added toward increased autonomy and accountability while regularly updating necessary digital skills to the learning outcomes (LO) according to Cir. 12/2017/TT-BLDTBXH.

To acquire exact information on the list of training disciplines, occupations related to digital technology and skills for other disciplines, occupations, it's necessary to closely cooperate with the Ministry of Information and Communications (MIC), relevant industry associations and to refer to the list of training disciplines, occupations of countries with economic and labour relationship with Vietnam to enhance global integration. The list of training disciplines and occupations promulgated in Cir.

26/2020/TT-BLDTBXH was recently issued, yet it doesn't satisfy these conditions and needs revision.

The legal documents on education and training content are shown in Figure 4. The main content is mostly demonstrated in Cir. 03/2017/TT-BLDTBXH and it will be the focus of considerations of problems, constraints as well as proposals for relevant addition and modifications.

From the results, the research team has picked out the following primary issues:

- ! The demands of the labour market are changing rapidly towards higher requirements for digital skills. The IT knowledge and skills in the LO have not fully met the requirements of the DX project of TVET.
- ! The digital skills requirement for each discipline, occupation is different while the Informatics curriculum is the same, resulting in both redundancy and deficiency.
- ! Demands for digital technology, IT disciplines increase sharply towards a digital economy. The list of IT disciplines and their outcomes in terms of knowledge and skills have not satisfied the requirements of the labour market and are not yet compatible with the system of higher education and training IT disciplines, making it difficult to transfer from TVET to the university level.
- ! Credit-based training and modular training have been fully regulated; however, schools find managing these training forms very complex due to lack of technological infrastructure, therefore these were not implemented on a large scale.

The solutions to these issues shall be proposed later.

2.2. Teaching and learning methods

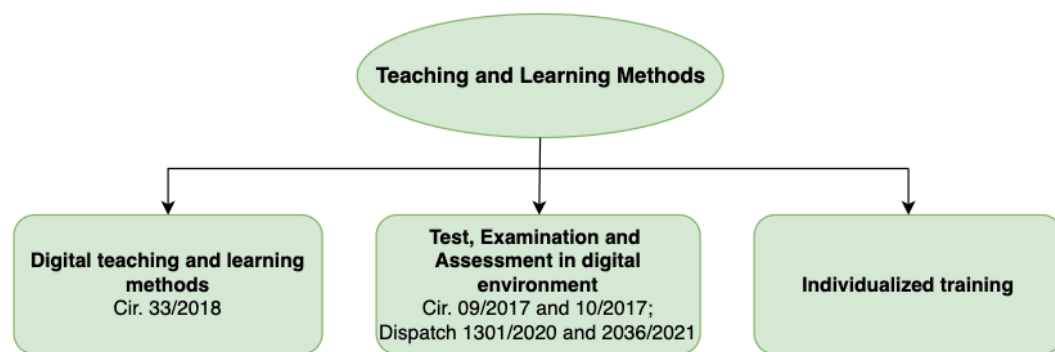
A digital environment inevitably requires corresponding pedagogical methods. Under the influence of the Covid-19 pandemic, all the schools who participated in the survey have conducted part of their learning and teaching activities online. However, as the implementation of online training due to the pandemic is just a coping response, furthermore due to lack of awareness and unpreparedness in all aspects, these participant schools just apply the same content as well as teaching methods of a direct class to an online class. Regarding the regulatory framework, all schools used Cir. 33/2018/TT-BLDTBXH which was designed for distance training.

Applying the same content and methods to online training resulted in poorer teaching and learning quality compared with direct training, while DX was expected to improve TVET quality if appropriate pedagogical methods are employed. Changes to the training environment also compel more regulations on educational governance, compensation for teachers, necessary learning hours for each subject content...

Meanwhile, some progressive legal documents such as Cir. 33/2018/TT-BLDTBXH were slow to be put into practice due to insufficient human and technology resources.

From the results, the research team has picked out the following issues that need to be addressed:

- ! There are no specific regulations and guidance on new teaching and learning methods suitable for DX (flipped classroom, blended learning...)
- ! Due to Covid-19, online teaching and learning has made significant progress, however the regulations on testing and assessment in an online environment is still unspecified, causing difficulties during implementation.
- ! There is no regulation on the number of attendants, learning hours for each subject as for online training, the same regulations for direct training were



applied.

Figure 5: Regulatory framework of Teaching and learning methods

All the mentioned issues are important, however the most urgent one is the organization of online assessment and the number of attendants when teaching online.

2.3. Teachers and students

To learn and teach in a digital environment, the teachers need to be equipped with digital knowledge, skills and digital pedagogical skills. The survey showed that no

teacher has received training on digital pedagogy. There is not yet any regulation on digital pedagogy itself.

Learning methods in a digital environment have been introduced to newly enrolled students of some schools, but there is no general guiding document.

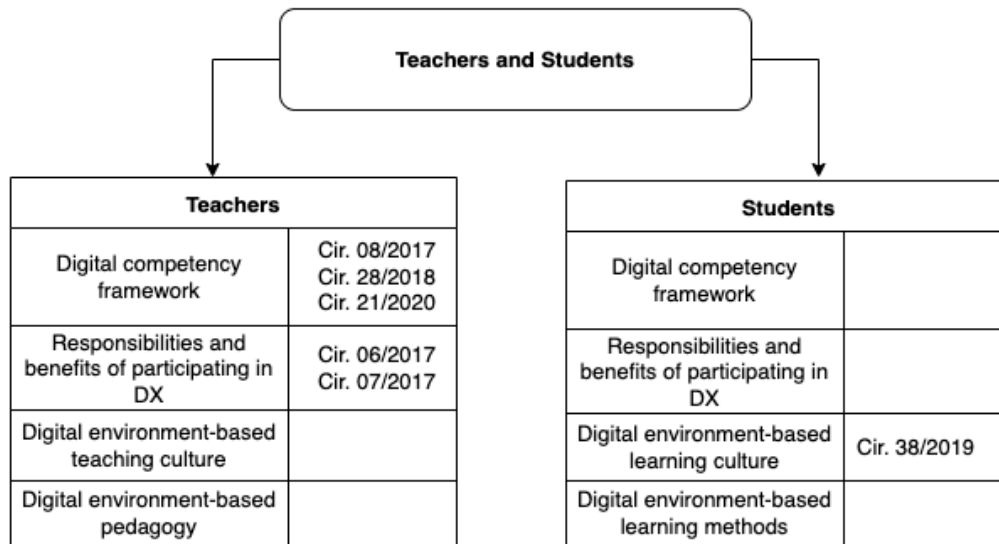


Figure 6: Regulatory framework of Teachers and students

The main issues that emerged from the interviews are:

- ! The pedagogical training content has not satisfied sufficient requirements for digital pedagogy.
- ! Pedagogical training for trainers at enterprises are facing difficulties and DX is required for this activity.
- ! Regimes and policies for teachers teaching online in particular and teaching in a digital environment in general have not been modified to align with the new conditions
- ! There are no specific regulations and guidance on learning in a digital environment
- ! There are no regulations to address the issues of teaching and learning in a digital environment.

2.4. Digital infrastructure, platforms and learning resources

There would be no DX without digital infrastructure and digital learning resources. In reality right now, IT equipment, digital infrastructures, teaching and learning management software and school administration software are still “nice-to-have”

rather than “must-have”. Investing in digital infrastructure and complying with general regulations on IT investments have not yet become a mandatory component in the requirements for the list of training equipment of TVET institutions.

Regimes and policies concerning depreciation, maintenance cost, maintenance and upgradation of computers and other IT equipment are having many constraints.

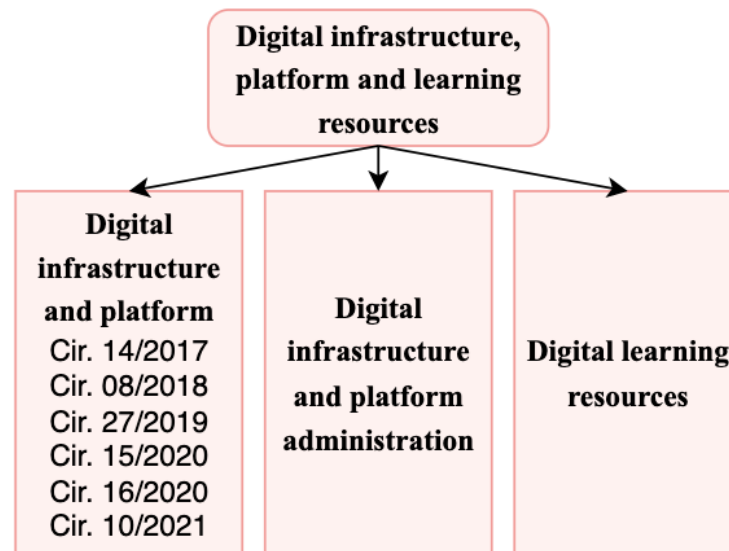


Figure 7: Regulatory framework of Digital infrastructure, platforms and learning resources

Digital learning resources is a new issue for TVET, but it plays an essential role to ensure the quality of teaching and learning in a digital environment. There is completely no regulatory framework for investment, exploitation and use of digital learning resources; this matter must be prioritized and addressed in the DX project of TVET.

The research results presented some issues:

- ! IT equipment including hardware, software, internet connection... are not considered essential equipment for TVET institutions.
- ! The investment mechanisms for technological infrastructure are ambiguous and causing difficulties.
- ! There is no policy mechanism for investment on digital learning resources.
- ! There is no copyright mechanism for digital learning resources.

2.5. Digital administration and management

State monitoring and school administration is a component to which DX is bringing about many promising benefits. The management and administration task itself is regulated by many different legal documents, developed and promulgated by both TVET sector and other state regulators. Within the scope of this research, the research team focuses on legal documents regarding the TVET sector.

We could say that a slow-to-update regulatory framework would directly affect the effectiveness of DX and is most clearly portrayed in this component, digital administration and management. Therefore, quick revision of the framework would significantly expedite the DX progress in general.

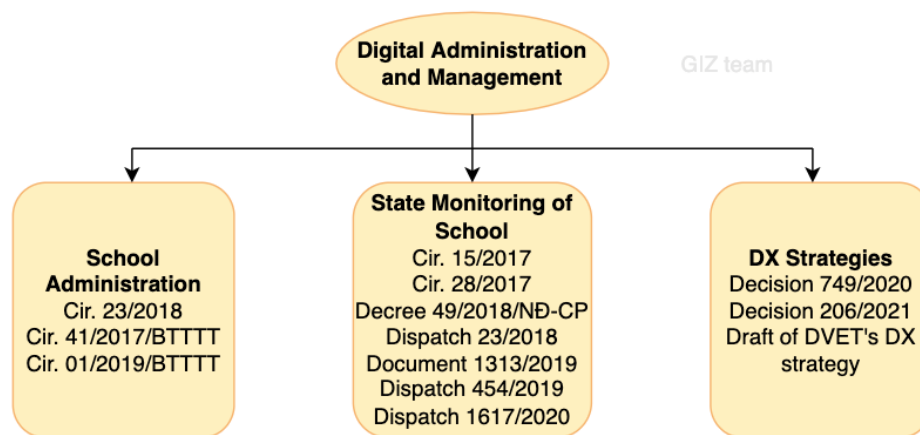


Figure 8: Regulatory framework of Digital administration and management

The issues that need to be addressed include:

- ! Inspection, examination and accreditation still rely on print documents, hindering DX.
- ! There is no regulation to standardize the chart system as well as administrative documents and procedures for the whole system with a digitized approach.
- ! The regulations on systemizing teaching records for teachers still focus on print documents, which is a burden for teachers.

3. RECOMMENDATIONS

An overall comment on the current situation drawn from the survey is that, the current regulatory framework needs to be modified and added a lot of new content to satisfy the strict requirements of the DX project of TVET. Some issues obviously need immediate modifications, others need more time to align with the DX progress of the whole sector, especially as some can only be conducted when an appropriate digital infrastructure is available.

On the other hand, DX is a lengthy process in which both training forms exist in parallel (direct training in a traditional, physical environment and online training in a digital environment), this reality must be considered during modifications. The expert team recommends adding DX content applicable for eligible TVET institutions to existing legal documents, avoiding developing and promulgating new documents.

The modifications and additions should be made towards openness, increased autonomy and accountability of TVET institutions, and restrict hard regulations that might hinder practices in the future. Next up are our recommendations on the most prominent issues.

Note that these recommendations are expert opinions from a DX point of view. When considering these recommendations, state regulators need to examine all aspects of modification, addition and promulgation of new regulatory documents. Also note that the relevant documents mentioned in each recommendation are just our initial suggestions, which might be incomplete or not entirely accurate. We are certain that DVET professionals – who compiled the regulatory documents and have a thorough understanding of TVET activities – would be able to exactly and sufficiently identify legal documents and specific contents that need modifications.

3.1. Education and training content

- ! Cooperate with the MIC, relevant industry associations and refer to international achievements to name and identify training content for digital technological disciplines, occupations. Have a more flexible mechanism to add new disciplines, occupations to the list of training disciplines and occupations (Make modifications and additions to Cir. 26/2020/TT-BLDTBXH). The overall requirement for these modifications is that the name of disciplines, occupations must reflect exactly the job characteristics, satisfy the recruitment demands of

enterprises and employers. Meanwhile, the name of disciplines, occupations should be attractive to potential students in order to promote enrolment, especially they should be compatible with the system of training disciplines, occupations of the university level to facilitate transferring.

- ! There needs to be a mechanism allowing schools to regularly update and add new content to their curricula (Make modifications and additions to Cir. 03/2017/TT-BLDTBXH):
 - Regularly update required digital skills to the LO, thereby gradually enhance the overall quality of training. Requirements for IT knowledge and skills need to be updated and enforced in order to satisfy the requirements for DX. Besides, TVET institutions need to improve their autonomy to update digital skills that are more advanced than the overall requirements for the whole sector.
 - Promote linkages between institutions, enterprises and alumni to timely update the demands of the labour market. To promote such linkages, it's necessary to employ digital technology and add relevant regulations.
- ! For Informatics, design a common section (for all disciplines, occupations) and a specialized digital technology section (for specific disciplines). The name of the subject itself should be changed to “Digital Technology” to reflect the current trend towards DX (Make modifications and additions to Cir. 11/2018/TT-BLDTBXH).

3.2. Teaching and learning methods

- ! Promulgate regulations on new teaching and training methods, typically blended training (offline class combined with digital inputs such as digital technology, digital learning resources, digital & online services...) (Make modifications and additions to Cir. 09/2017/TT-BLDTBXH; Cir. 33/2018/TT-BLDTBXH).
- ! Quickly promulgate guidance for TVET institutions to conduct online testing and assessment. Regulate specific content and subjects that could be assessed online, specify criteria for assessment of safety, objectivity, truthfulness... on online testing and assessment (Make modifications and additions to Cir. 09/2017/TT-BLDTBXH; Cir. 33/2018/TT-BLDTBXH).

- ! Add regulations on the number of attendants, learning hours, teaching hours conversion... for online training and other forms of teaching and learning in a digital environment (flipped classroom, blended learning, project-based learning) (Make modifications and additions to Cir. 09/2017/TT-BLDTBXH; Cir. 33/2018/TT-BLDTBXH).
- ! Learn from the experience of developing modular training program of Mechatronics supported by GIZ, develop and promulgate guidance for TVET institutions to develop curricular for other disciplines, occupations, including modular content updates in accordance with the changing requirements of the labour market.

3.3. Teachers and students

- ! Develop and promulgate the standards for digital knowledge and skills of teachers by disciplines and introduce them into pedagogical training and further training (online) for current teachers (Make modifications and additions to Cir. 08/2017/TT-BLDTBXH).
- ! Prioritize DX of vocational pedagogical training activities for trainers in enterprises. Make additions to relevant guiding documents (Make modifications and additions to Cir. 08/2017/TT-BLDTBXH).
- ! Compile and distribute digital learning resources for schools to quickly introduce to their students. The introduction can be conducted online.

3.4. Digital infrastructure, platforms and learning resources

- ! Make additions to the list of computers and IT equipment, including must-have software for TVET institutions (Make modifications and additions to Cir. 14/2017/TT-BLDTBXH).
- ! Develop and promulgate sandbox guidance on IT investment projects in TVET institutions, regulate costs for maintenance and upgradation of equipment.
- ! Develop and promulgate mechanisms and policies on digital learning resources, including copyrights regulations.

3.5. Digital administration and management

- ! Quickly modify regulations on inspection, examination and accreditation to align with DX strategies. For TVET institutions with a digital environment-based

management system, print documents are not required (Make modifications and additions to Cir. 23/2017/TT-BLDTBXH).

- ! Develop and promulgate digital report forms for the whole sector (Make modifications and additions to Cir. 23/2017/TT-BLDTBXH).
- ! Simplify and digitize the system of teaching records as much as possible and apply digital technology in managing teaching records, shorten records compiling time for teachers. Refer to the experience of the MOET for the implementation of this (Make modifications and additions to Cir. 23/2017/TT-BLDTBXH).

3.6. Recommendations for implementations

- ! The revision of the regulatory framework requires active participation from all stakeholders of TVET rather than merely the business of DVET. TVET institutions might conduct reviews of their own internal regulations and proactively modify them to align with the DX trend.
- ! The modifications should be made with close cooperation of all stakeholders, especially leading TVET institutions in DX who are experienced and aware of potential challenges and constraints to their DX practices.

4. CONCLUSION

The alignment of the regulatory framework is an essential part to ensure the success of the DX project of TVET and should be conducted and prioritized in sync with the DX process.

The research points out three groups of issue:

- ! Regulations and regimes issued by TVET institutions on management of their internal activities. To address this group, institutions need to prioritize reviews and modifications towards most utilized autonomy.
- ! Group of issues of the DVET regulations shall need to be analyzed, added and modified as soon as the DX project is approved by the Government. The implementation of this should direct towards adding regulations on TVET activities to existing documents.
- ! For the group of issues of regulations under the authority of higher levels, proposals for modifications and additions are required.

To ensure the quality of modifications and additions to the regulatory framework, it's necessary for the regulating agency to closely cooperate with all stakeholders, especially leading TVET institutions in DX. The expert team recommends selecting 11 partner TVET institutions of GIZ for sandbox piloting of new mechanisms and policies.

Due to time constraints, this research could only systemize the regulatory documents related to TVET from a DX point of view and propose overall directions for modifications and additions. To implement specific modifications, more in-depth research in the future is required. We hope that the DVET finds the research findings useful in the implementation of the DX project in TVET.

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APPENDIX

Appendix 1: Research Design

Sep.	Activities	Organizations	No of participants	No of meetings/ Province	No of Province	No of meetings	Note	Date
1	In-depth interview with DVET		27			5		
1.1	Department of Formal Training	DVET	2	1		1	Qualitative research to explore and find out problems/ issues	11-14/10
1.2	Department of Continuing Training		2					
1.3	Department of Teacher Affairs		2					
1.4	Department of Student Affairs		2	1		1		
1.5	Department of Occupational Skills		2					
1.6	Vocational Education and training Accreditation Agency		2					
1.7	Department of Planning and Finance		2	1		1		
1.8	Department of Physical Facilities and Equipment		2					
1.9	Department of Organization and Personnel		2					

1.10	Department of Legal Affairs - Inspection		2					
1.11	DVET Office		2	1		1		
1.12	National Institute of Vocational Education and Training		2					
1.13	Leaders of DVET		1	1		1		
1.14	Experts		2					
2	Group discussion - local level		16					
2.1	Representatives of director boards	DoLISA	1	1	10	10	Qualitative research	18-29/10
	Representatives of training department		1					
	Legal specialists		1					
2.2	Representatives of rector boards	1 college	1					
	Representatives of academic and functional departments		2					
2.3	Representatives of rector boards	1 Intermediate School	1					
	Representatives of academic and functional departments		2					
2.4	Representatives of rector boards		1					

	Representatives of academic and functional departments	1 Elementary School	2					
2.5	Representatives of director boards	2 Enterprises	2					
	Trainers		2					
3	Online survey		35	45		1161	Qualitative and quantitative research	18-29/10
3.1	Leaders of DVET	DVET	1	3	1	3		
3.2	Representatives of the departments		12	12	1	12		
3.3	Representatives of staff		12	12	1	12		
3.4	Representatives of the director board	DoLISA	1	1	63	63		
3.5	Representatives of training department		1	1	63	63		
3.6	Representatives of staff		1	1	63	63		
3.7	Representatives of rector boards	TVET institutions (College, Intermediate and Elementary level)	1	3	63	189		
3.8	Representatives of academic and functional departments		2	6	63	378		
3.9	Teachers and Specialists		1	3	63	189		
3.10	Representative of director boards	01 Enterprise	1	1	63	63		
3.11	Representative of departments		1	1	63	63		
3.12	Trainers		1	1	63	63		

4	Conference (Online)		72					
4.1	Leaders	DVET	3	1	X	1	Qualitative research to collect ideas/ comments to finalize the report	23/11
4.2	Representatives of the departments, staff		15					
4.3	Representatives of the Director Board, departments, staff	DoLISA	16					
4.4	Representatives of rector boards, academic and functional departments	TVET institutions (College, Intermediate and Elementary level)	24					
4.5	Representative of director boards, departments, trainers	Enterprises	9					
4.6	Representative of GIZ	GIZ	5					
5	Webinar: Introduction of DX and the policy review on the implementation of DX in the TVET sector of Vietnam			1		1		14/10/2021

Appendix 2: In-depth interview with DVET results

NO.	QUESTION	In which document was it regulated? (Law, Decree, Circular, regulation, policy of an organization...)	Difficulties during the process of Digital Transformation (DX)?	Proposal for modifications to current documents/ regulations?	Which new regulation is needed for change and application of DX? (Law, Decree, Circular)
1	CURRICULUM AND TRAINING CONTENT				
1.1	Learning outcomes (LO)	Since 2017 when developing LO, executive board is required to integrate professional skills, digital skills and green skills to the LO of all training disciplines			
-	Digital competency	Government's Decision No. 749: at least 20% of the curriculum shall be taught online	Which content is chosen by TVET for online training?		
-	LO update frequency	Circular No.12/2017/TT-BLDTBXH requires an update every 3 years.	<ul style="list-style-type: none"> - Is state funding sufficient to meet LO update frequency? - The LO update frequency is at least once every 3 years for traditional learning; in case of DX content, is modification required? 		

1.2	Practical time		DX is not applicable for all modules: some modules can apply DX, some require field practice at training institutions, companies...		
1.3	Year-based training	Circular No. 09/2017/TT-BLDTBXH		Circular No. 09 is being modified for specification of LO related regulations	
1.4	Credit-based training				
1.5	Modular training				
1.6	Transfer among TVET system		How to acknowledge a learner's courses attended and assess their professional skills?		
1.7	Transfer from TVET to University level				
1.8	Affiliate training with enterprises	1 TVET administration skill training program for enterprises and 3 pedagogical knowledge training programs for trainers in	- Is it necessary to establish standards for trainers in enterprises?	Circular regulating professional standards for trainers in enterprises are being developed.	

		enterprises issued towards training of elementary, intermediate and college levels	- Are trainers in enterprises eligible for incentives for teachers? Are they paid for employee training? Is there a change in their job position?		
1.9	School autonomy and accountability on curricula		School autonomy is allowed but human resources might be insufficient, something that schools want to do are not regulated.		Standards for managers of TVET institutions are being developed, including DX
1.10	List of IT occupations				
1.11	Curricula for IT occupations				
2	TEACHING AND LEARNING METHODS				
2.1	New training and learning methods, suitable for DX (blended learning and other methods)	Circular No. 33/2018/TT-BLDTBXH regulated clearly in details on distance training, guided self-study, provided guidance on curriculum, textbook,			

2.2	Individualized training	teachers, assessment, certification...			
2.3	Assessment and evaluation in a digital environment				
3	DIGITAL INFRASTRUCTURE, PLATFORM AND LEARNING RESOURCES				
3.1	Digital infrastructure and platform				
-	Technological infrastructure requirement	Developing and proposing for regulations of: List of minimum training equipment required for occupations; Economic and technical norms for each occupation; and Facility standards in practical, experimental and lab works.	These contents are satisfying requirements for a standard training class, which is a traditional, direct class	Modify to suit the digital context and align with the legal system for each occupation	Regulate standards for digital labs, virtual reality (VR), augmented reality (AR) applications to suit the digital context
-	Learning management system (LMS)				

	platform requirement				
-	Administrative platform requirement				
-	Administration of digital infrastructure and platform				
3.2	Digital learning resources				
-	Development		Payment norms for teachers and enterprises developing digital learning materials	Specific regulation is needed	
-	Intellectual property rights		Copyrights and intellectual property rights during development of shared learning resource inventory		
-	Accreditation		How to appraise e-lesson plans?		
-	Use of learning resources				

-	Sharing of learning resources		There is no regulation on charging and benefit distribution of building a separate channel for learning resources sharing		
4	TEACHERS AND STUDENTS				
4.1	Teachers				
-	Framework of reference for digital competency	There is no standard regulation for ICT competency for teachers	Current standard requirement for teachers is an IT certificate issued by MOHA, but DX requires a higher level of competence		Develop standards for ICT competency for teachers based on UNESCO ICT Competency Framework for Teachers
-	Responsibilities and benefits of DX			Proposing for enactment of modifications to Circular No.07/2017 on working regime for teachers, in which specifies teaching hours norm for teachers include direct, online and	

				blended teaching hours, converted to standard hours to ensure the rights of teachers, provide guidance for TVET institutions and facilitate implementation in the current context.	
-	Digital environment-based teaching culture	Behavioral culture: circular enacted since 12/31/2019			
-	Digital environment-based pedagogy			Proposed for enactment of a circular on pedagogical skill training programs, which adds a new module on digital teaching, digital methods of teaching and assessment	
4.2	Students				

-	Framework of reference for digital competency			In November: enact a Circular and build a project on auxiliary skills, including self-study and digital skills	
-	Responsibilities and benefits of DX				
-	Digital environment-based learning culture		TVET institutions and teachers' attention and education about privacy risks, cybersecurity		
-	Digital environment-based learning methods				
5	ADMINISTRATION AND MANAGEMENT				
5.1	School administration in a digital environment		The enrolment process is not mentioned in DX		
5.2	DX strategies		Inequality should be of concern		

			<p>The DX project has funding for investment, but the investment is fragmented to all TVET institutions and DVET, in the form of public investment according to current regulations.</p> <p>Therefore, difficulties may arise during implementation if the ‘what’ and ‘how’ of investment can’t be determined</p>		
5.3	<p>School monitoring by the superior authority in a digital environment</p>		<ul style="list-style-type: none"> - There is no uniform platform for the whole TVET system - There is no regulatory framework to secure running of application software during administration and implementation 		
5.4	<p>TVET database</p>	<p>There is no regulation on databases</p>			

6	Institution and regulatory framework	There is a sufficient institution on DX: IT law, IT applications, digital signature...			View as a whole but implement step by step, following the roadmap
		Regulated TVET laws defined TVET as open and flexible. This laid the basis for DX approach			

Appendix 3: Group discussion results, local level

NO.	QUESTION	In which document was it regulated? (Law, Decree, Circular, regulation, policy of an organization...)	Difficulties during the process of Digital Transformation (DX)?	Proposal for modifications to current documents/ regulations?	Which new regulation is needed for change and application of DX? (Law, Decree, Circular)
1	CURRICULUM AND TRAINING CONTENT				
1.1	Learning outcomes (LO)	Circular No. 56/2015/TT-BLDTBXH guiding the development, appraisal and promulgation of national occupational skills standards			Build a sample framework rather than assign the tasks to the ministries. Based on the national framework of competency, TVET institutions develop suitable LO and curricula
-	Digital competency	Circular No. 11/2018/TT-BLDTBXH stipulating curriculum of Informatics in the block of general subjects in intermediate, college qualification training programs	Informatics only provide training of office IT, without DX skills and IT applications that meet enterprises' realistic demands (x2) Students with an informatics certificate may receive	It's necessary to redevelop the detailed curriculum of Informatics with respect to IT skills, such as online tools usage, email... Withdraw this regulation	

			exemption for this subject while he/she may not meet requirements in terms of knowledge, skills		
			The curriculum of Informatics was stipulated fixedly and mandatory for schools to follow. If they want to add new content, they have to add new modules.	Propose to abolish compulsory LO and curriculum of Informatics so schools can proactively develop suitable LOs, curricula and learning time for each faculty and occupation (x2)	
		Circular No. 12/2017/TT-BLDTBXH and other circulars stipulating learning outcomes of curricula	In the process of DX, new subjects need to be added to the curricula to meet DX requirements. However, if too much emphasis is put on DX content, the professional content shall be reduced		There needs to be a document regulating which subjects are suitable for each occupation
			LOs for many occupations was stipulated when there was no	Modify stipulated LOs	The curricula should be modified to suit DX, such

			DX approach, so the LOs of some occupations stipulated in 2018 doesn't have DX content		as addition of knowledge of IoT, AI
-	LO update frequency required		The regulated frequency is once every 3 years, however in reality, particularly in the context of Industrialization 4.0, LO is updated regularly	<ul style="list-style-type: none"> - Largely-affected occupations should update LOs regularly, once every 1-2 years or even more frequent - At least after 2 academic years 	
1.2	Practical time	Circular No. 03/2017/TT-BLDTBXH regulating the procedures for development, appraisal and issuance of the curriculum; compiling, selection, appraisal of the textbooks for intermediate, college qualification training	The curriculum is regulated to contain 60% time of practice, in which 40% are practical work at enterprises	The regulation on practical time at enterprises should be more flexible	
			The learning time of 30% for theory, 70% for practice is appropriate	<ul style="list-style-type: none"> - Theory learning results need to be recognized in a digital environment - Practical time accounts for 60 – 70%: specific occupations and subjects that can be built in a digital 	

				environment should be determined	
1.3	Year-based training				
1.4	Credit-based training	Circular No. 09/2017/TT-BLDTBXH stipulating training organization of intermediate, college qualification curricula according to year-based or modular or credit-based form; regulation on test, examination, graduation recognition	There are very few documents regulating credit-based and modular training, while existing ones are not specific	There needs to be a document stipulating more details and extension of credit accumulating time, the learner shall be certified for completion of the course as he/she has accumulated enough credits.	
			1 credit requires at least 15 hours of theory + 30 hours of self-study; or at least 30 hours of practice + 15 hours of self-study; or 45 hours of internship at enterprises	- Guidance on measurement of self-study hours, internship hours should be provided online - Withdraw regulations on minimum hours and	

				stipulate specific numbers of hours instead	
1.5	Modular training		Merging some credits into 1 module	Specific guidance is needed	
1.6	Transfer among TVET system	Circular No. 27/2017/TT-BLDTBXH on provision of bridge program between levels of TVET	The regulations are not specific and clear enough, resulting in different understandings of the regulations		
			Because of enterprises' labour demands in a short time, training is implemented towards short-term training.	There needs to be a regulation on transfer between short-term, medium-term and long-term training	
			Schools are autonomous in transfer training, however as intermediate schools develop curricula themselves then colleges add new content to these curricula, the curricula of		

			different colleges do not have a shared standard		
1.7	Transfer from TVET to University level	<ul style="list-style-type: none"> - Decision No. 18/2017/QD-TTg on bridge program between intermediate, college level and university level - Circular No. 29/2017/TT-BLDTBXH stipulating affiliate training implementation - Circular No. 07/2017/TT-BGDDT stipulating affiliate training of university level (transfer regulations for part-time learning occupations) 	Only training time was recognized, training content, knowledge and skills was not determined	Connection is required between MOET and MoLISA	
1.8	Affiliate training with enterprises	- Official dispatch No. 786/LDTBXH-TCGDNN on TVET-industry linkages	There is no document allowing enterprise placement in schools; no legal regulations		- Establish job advisory boards with the participation of enterprises

		<p>- Official dispatch No. 589/TCGDNN-DTCQ on promotion of cooperation between TVET institutions and enterprises</p> <p>- Circular No. 29/2017/TT-BLDTBXH stipulating affiliate training implementation</p>	<p>on cooperative steps between schools and enterprises</p>		<p>- Recognize training at enterprises by assessment and certification</p>
			<p>There is overlap among governing agencies on development of curricula, textbooks, standards and administration, administration between schools and enterprises</p>		
			<p>Trainers at enterprises may not have received teaching and pedagogical skill training (x5)</p>	<p>Mandate trainers at enterprises to complete training and certification of pedagogical skills (x2).</p>	<p>- There should be regulations on trainers at enterprises in the system of TVET teachers</p> <p>- There should be online courses and end-of-course examination to assess and certify pedagogical skill training, (x2) or abolish this criterion</p>

					- Reduce occupational skills requirements for trainers at enterprises; because those who cooperate with schools to provide practical training are already skilled labors
			There is no connection network with enterprises, most communications are done via email, zalo...		Build a website for enterprises- TVET institutions linkages, providing supply-demand information of labour resources between enterprises and schools (similar to New Zealand's model). Dong Nai proposed for pilot implementation
		Section 5, Article 51 of 2014 Law on Vocational Education and Training	MOF has no document providing specific guidance on which expenses are included	This needs to be specified by the MoLISA and MOF	

		specifies “Expenses for vocational training activities of enterprises are deducted when determining the taxable income under the provisions of the tax law.”	in “expenses for vocational training activities”, therefore enterprises can’t provide proofs of these expenses		
		The Labor Code of Vietnam	An intermediate graduate is under 18 years of age and not permitted to conclude an employment contract		
1.9	School autonomy and accountability on curricula	Circular No. 03/2017/TT-BLDTBXH regulating the procedures for development, appraisal and issuance of the curriculum; compiling, selection, appraisal of the textbooks for intermediate, college qualification training	LOs for all occupations have not been fully stipulated, schools can determine the LOs themselves. But general subjects are stipulated by the MoLISA, hindering schools to provide training towards its own occupational direction, developing into STEM subjects...		<ul style="list-style-type: none"> - There should be a set of guiding criteria, then allowing school autonomy and modification to suit their own TVET institutions - Develop only about 30% fixed framework - More school autonomy should be encouraged in terms of new training

					discipline/occupation addition - After issuance of a curriculum, there should be a department to examine and monitor issued framework
1.1 0	List of IT occupations	Decision No. 1446/QD-TTg on 20 occupations of “training and retraining program to meet the requirements of the fourth Industrial Revolution”.			Curricula for new disciplines should be researched and developed in the new context
		Circular No. 26/2020/TT-BLDTBXH stipulating the list of training disciplines/ occupations of level IV, intermediate and college			Lists and curricula should be developed and issued on a disciplinary basis (including related occupations)

1.1 1	Curricula for IT occupations	Circular No. 44/2018/TT-BLDTBXH Stipulating minimum knowledge and skills requirements that learners must meet upon graduation of intermediate, college qualification training for computer and IT disciplines/occupations	Too specific, focusing on a narrow discipline	Regulation should be provided on a broad discipline	Add disciplines with high demands such as renewable energy, simulation and image processing
2	TEACHING AND LEARNING METHODS				
2.1	New training and learning methods, suitable for DX (blended learning and other methods)	Circular No. 33/2018/TT-BLDTBXH stipulating college, intermediate and elementary qualification training in the forms of distance training, guided self-study	Circular No. 33 regulates distance training, therefore inapplicable as no schools implement distance training for vocational training	DX does not only mean online training but also shared resources of digital learning resources, there should be flexible regulations allowing schools to teach online of a particular proportion	Enhance autonomy for TVET institutions: variety and flexibility between online, offline and blended training (x2)
			Currently IT application is only employed in online training;		There should be guidance on teaching and learning resource development

			DX-based teaching methods have not been trained		such as video, simulation...
2.2	Individualized training				
2.3	Assessment, evaluation in a digital environment	<p>- Circular No. 09/2017/TT-BLDTBXH stipulating implementation training organization of intermediate, college qualification curricula according to year-based or module, or credit-based form; regulation on test, examination, graduation recognition</p> <p>- Official dispatch No. 1301/LDTBXH-TCGDNN on Guidance of administration, organization of teaching,</p>	<p>Conduct regular examinations, mostly online, the final examination is offline or integrated (both online and offline) in compliance with current regulation, which is Circular No. 09/2017/TT-BLDTBXH; but this Circular has no regulations on online testing and examinations (x4), no specific regulations on objectivity, transparency and assurance of learners' interest (x3)</p>	<p>Modify Circular No. 09/2017/TT-BLDTBXH: add new regulations/guidance on online exam organization and online result recognition (x4); stipulate conditions for online testing and examination (infrastructure, equipment, conditions ensuring fairness, objectivity and against cheating) for each discipline/occupation.</p>	

		testing and assessment in online training - Official dispatch No. 2036/TCGDNN-DTCQ 2021 on organizing online graduation examination of intermediate and college levels			
3	DIGITAL INFRASTRUCTURE, PLATFORM AND LEARNING RESOURCES				
3.1	Digital infrastructure and platform				
-	Technological infrastructure requirement		DVET promulgated a series of documents regulating technical norms and list of minimally required equipment; however, they soon became out of date	There should be a mechanism allowing schools to quickly update alternative lists as they purchase new equipment.	Avoid hard regulations to enhance flexibility and adaptation of TVET institutions because some changes cannot be foreseen
			The IT infrastructures of TVET institutions are outdated and		Develop criteria, minimum standards and lists of

			do not follow a uniform standard		minimally required equipment for DX (x4)
			The digitization of learning resources needs a lot of equipment, but schools are not permitted to buy those not in the list of training equipment; quick purchase is required in order to digitize quickly, but the waiting time is long.	Modify the MOF-related and other policies of DVET	<ul style="list-style-type: none"> - Have policies to provide Internet cost aid, financially support students to buy computers and audio-visual devices - Have policies to provide more computers with adequate configuration for schools, fund upgrading and maintenance - DVET needs to build a system of virtual practice rooms/models for national use
-	Learning management system (LMS) platform requirement		A school's platform is not connected with others'		A uniform platform would enable data communication with DVET

-	Administrative platform requirement				
-	Administration of digital infrastructure and platform		LMS platform has enough parameters and data but its administration form does not suit current administration, governance form		Refer to international systems, global standards
3.2	Digital learning resources				
-	Development				<ul style="list-style-type: none"> - There should be regulations on staff quotas, assignment of specialized staff on digital transformation, technical support for digital activities (x2) - Issue distance pedagogical skill training program to enhance technical staff's skills, so

					that they can provide guidance for students
-	Intellectual property rights				<ul style="list-style-type: none"> - There need to be regulations on intellectual property rights when sharing digital learning resources (x5) - Before uploading learning resources to international platforms and websites such as youtube, facebook, regulations of international law should be considered
-	Accreditation	<ul style="list-style-type: none"> - Circular No. 15/2017/TT-BLDTBXH stipulating VET accreditation criteria, standards - Official dispatch No. 454/TCGDNN-KDCL providing guidance of 	<p>The context is DX but for accreditation, all documents must be printed out</p> <p>The perception that library books and textbook are all traditional hard copies</p>	Alter with a digital library	<p>There need to be regulations on accreditation of digital learning resources (x2)</p>

		assessing TVET institutions accreditation standards for intermediate, colleges			
-	Use of learning resources				
-	Sharing of learning resources	There is no regulation			<ul style="list-style-type: none"> - There should be a shared learning resource inventory used for teaching (x2) - DVET is the focal point for development of shared learning resource inventory using public funding and broad sharing of this inventory (x2) - There should be incentives for teachers, TVET institutions, enterprises that share this inventory (x4)

					- There should be mechanisms calling for user data collection
4	TEACHERS AND STUDENTS				
4.1	Teachers				
-	Framework of reference for digital competency	Circular No. 08/2017/TT-BLDTBXH on standards in qualifications of VET teachers	<p>Teachers must meet knowledge requirements on informatics and foreign languages</p> <p>Schools are allowed to determine their knowledge requirements on informatics and foreign languages by job position, however they become confused when having to determine professional requirements based on DX: what skills must teachers acquire to keep their jobs?</p>	<p>There need to be direction and basic criteria for DX requirements in general for professional knowledge and skills of teachers (x3)</p> <p>The regulations must be clearly articulated, rather than just classified as A, B, C...</p>	<p>- Digital learning resource development training must be provided to teachers, also teachers should learn MOOCs themselves</p> <p>- Train and equip DX competency for current students who would become future generation of teachers</p>

-	Responsibilities and benefits of DX	Circular No. 07/2017/TT-BLDTBXH on working regime for VET teachers	It takes time to develop digital learning resources	<ul style="list-style-type: none"> - Teachers have responsibilities to update knowledge and skills for DX - There should be mechanism to encourage, recognize and reward teachers who develop digital learning resources (x5) - Have flexible regulation on minimally required teaching hours per year - There should be regulations guiding the conversion of online and offline teaching hours; on the number of teaching hours required for online training (x2) 	<p>Piloting: Assigning each faculty to develop digital learning resources for 10 lectures, recognized equivalent to 1 school-based scientific research that is financially aided, counted for scientific publication and evaluated by a committee</p>
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-	Digital environment-based teaching culture				
-	Digital environment-based pedagogy				The MOET and MoLISA should agree on using 1 certificate in pedagogy
4.2	Students				
-	Framework of reference for digital competency				
-	Responsibilities and benefits of DX		Management of learners during online learning		
-	Digital environment-based learning culture		Direct, public communication with friends and teachers are limited, leading to depression and passiveness in a long term		Use the Code of conduct on social networks issued by the MIC
-	Digital environment-based learning methods				
5	ADMINISTRATION AND MANAGEMENT				

5.1	School administration in a digital environment				<ul style="list-style-type: none"> - There should be regulations on digital signature (x2), learner record archive, accounting vouchers, training activities diaries... in a digital environment and unified nationally, recognized and stored on a shared database of the IT infrastructure administrative system - Establish a separate board of administration for network infrastructure and IT equipment
5.2	DX strategies		No specific document on DX and online training has been regulated	There needs to be a written directive that mandates school to implement DX	<ul style="list-style-type: none"> - DX in a discipline should link with the locality's DX process - The general DX strategy must be built early with

					<p>specific roadmap, goals, human resources, equipment and infrastructure... based on which TVET institutions develop DX strategy for their owns, in order to implement DX uniformly in the system</p> <p>- A general list containing all factors should be built, including DX platform, infrastructure and others... to determine the level of DX the TVET institutions is at, provide orientation for further alignment; build a KPI set on DX for schools to measure their own level of DX and the whole general discipline</p>
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5.3	School monitoring by the superior authority in a digital environment				
-	Keeping records, books	Circular No. 23/2018/TT-BLDTBXH on requirements of records, books in intermediate, college qualification training	DVET regulated too many types of records and books that are difficult to manage (x2)	<ul style="list-style-type: none"> - Modify Circular No. 23: modification to data is not allowed once records and books are digitally saved, in order to create trust - Discard Student registration book and alter with the Total academic transcript - Convert other records into digital forms 	There needs to be a legal document guiding legal digitization of records and books (x2)
			Many systems such as diploma management, enrolment management systems of DVET are in operation but these systems		There needs to be connection between software and unification of forms (x4)

			are not unified from local to central level (x7)		
-	Accreditation	<ul style="list-style-type: none"> - Circular No. 28/2017/TT-BLDTBXH stipulating the quality assurance system of VET institutes - Circular No. 15/2017/TT-BLDTBXH stipulating VET accreditation criteria, standards - Official dispatch No. 454/TCGDNN-KDCL guiding assessment of accreditation standards for elementary, intermediate and college training programs 	<ul style="list-style-type: none"> - All circulars have terms on DX and encourage DX. However, the document guiding accreditation specifies 'documents as proofs' - Accreditation does not acknowledge IT applications 	Specify the process and modify proof requirements for external accreditation. The terms on digital proofs needs to be added (no need to print out digital learning resource, digital textbooks to serve accreditation) (x2)	DX of training activities must align with policies on accreditation of training quality of TVET institutions, training programs, inspection and examination by state-prescribed competent authorities
5.4	TVET database		Database confidentiality during development, publishing and implementation has not been regulated clearly and		- There must be a mechanism for shared resources

			specifically, especially personal information database		- Upon building a national shared resources platform, there should be agreement from central to local level and integration between ministries (x2)
6	Institution and regulatory framework		Currently the infrastructure and facility conditions of TVET institutions are varying, training and specialized disciplines are of different development levels. Staff abilities are also stratified and differ greatly		Issue necessary TVET institution group-context aware adaptive documents and policies
			The documents are generally adequate, but as for DX adaptation there is no official document, specific and uniform regulations	Do not issue more legal document, instead add and modify to specify and guide the DX process	Modifications should be made directly to the main body of the documents by adding DX content, thereby the whole content is consistent, DX and traditional conduct should not be separated

			<p>Infrastructure investment in DX projects mostly goes to central-level schools, while local-level schools must rely on local funding</p>	<p>Investment needs to be distributed to local-level schools of key disciplines</p>	
			<ul style="list-style-type: none"> - Many of current documents are not legal documents but only dispatch providing guidance, therefore they need to be legalized - Regulators based on old knowledge, habits and traditional method to develop these documents - The process of making legal documents is lengthy while science and technology advance rapidly, documents might become outdated even though they have just been drafted 		<p>Build directive framework rather than specific regulation, standards of reference rather than mandatory so localities and educational facilities can decide how to teach and digitally transform based on their own curricula, training forms, learners, technical conditions and their learners' equipment.</p>

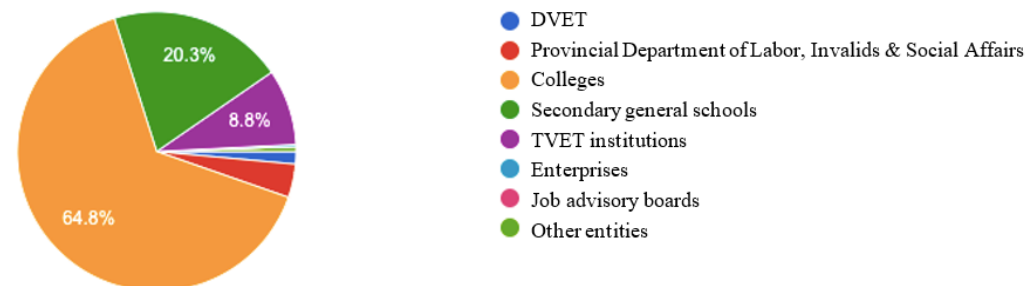
Appendix 4: Online survey results

I. Scope of the survey

- Responses from 47/63 provinces received
- Including: An Giang, Bac Giang, Bac Kan, Ben Tre, Binh Dinh, Binh Phuoc, Binh Thuan, Can Tho, Cao Bang, Da Nang, Dien Bien, Dong Nai, Dong Thap, Ha Giang, Ha Nam, Ha Noi, Ha Tinh, Hai Duong, Hai Phong, Hau Giang, Ho Chi Minh City, Hoa Binh, Khanh Hoa, Kien Giang, Kon Tum, Lai Chau, Lam Dong, Lang Son, Lao Cai, Long An, My Tho, Nghe An, Phu Tho, Phu Yen, Quang Binh, Quang Nam, Quang Ngai, Quang Tri, Quy Nhon, Soc Trang, Son La, Tay Ninh, Thai Nguyen, Tien Giang, Tra Vinh, Vinh Long, Yen Bai

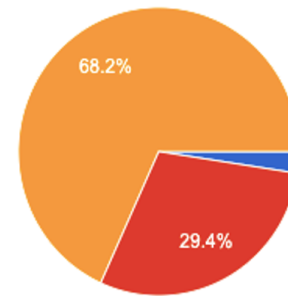
II. Organizations of the survey:

No.	Organizations	No. of Responses	%
1	DVET	18	1.5%
2	DoLISA	48	3.9%
3	Colleges	803	64.8%
4	Secondary general schools	252	20.3%
5	TVET institutions	109	8.8%
6	Enterprises	3	0.2%
7	Job advisory boards	0	0%
8	Other entities	7	0.6%



	Total	1240	100%
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III. Participants of the survey



- Leaders of DVET, Provincial Department of Labor, Invalids and Social Affairs, school boards, enterprises
- Managers of Division/Faculty/Center/Institute /Department...
- Officials, specialists, teachers

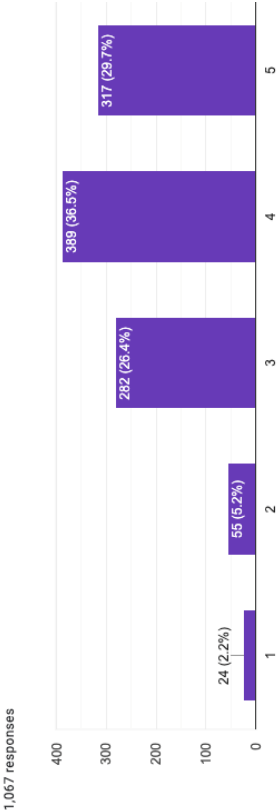
No.	Participants	No. of Responses	%
1	Leaders of DVET, DoLISA, school boards, enterprises	30	2.4%
2	Managers of Division /Faculty/Center/Institute /Department...	364	29.4%

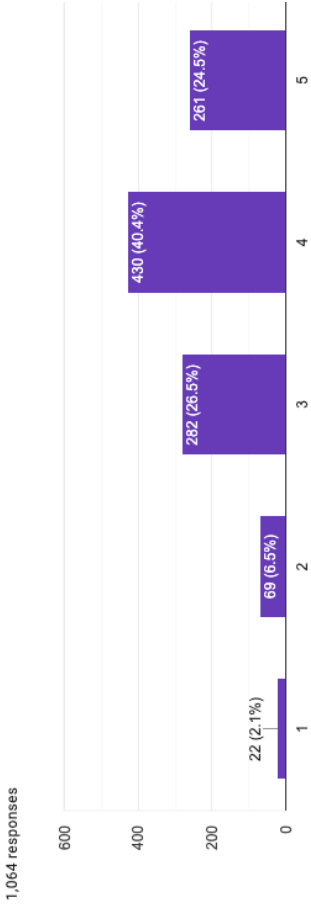
3	Officials, specialists, teachers	846	68.2%
	Total	1240	100%

IV. Survey results:

No.	ISSUE	Which documents regulate on this issue?	The relevance level of these documents from a digital transformation point of view (mark from 1 – very irrelevant to 5 – very relevant)	Suggested modifications to current documents/regulations; or development of new document/regulation towards digital transformation?																		
1	<p>LEARNING OUTCOME ON DIGITAL COMPETENCY</p> <p>Digital competency is the ability to use and master digital tools and platforms for life-time work and learning</p>	<p>Directive No. 24/CT-TTg Official dispatch No. 345/TCGDNN-DTCQ Law on Cybersecurity 2018 Law on Information technology 2006 Law on Education 2019 Law on Vocational Education and Training 2014 Resolution No. 52-NQ/TW Decision No. 1982/2016/QD-TTg Dec. 749/2020/QD-TTg Cir. 07/2015/TT-BGDDT Cir. 08/2017/TT-BLDTBXH Cir. 09/2017/TT-BLDTBXH Cir. 10/2017/TT-BLDTBXH Cir. 12/2017/TT-BLDTBXH Cir. 17/2021/TT-BGDDT Cir. 20/2019/TT-BLDTBXH Cir. 33/2018/TT-BLDTBXH</p>	<table border="1"> <caption>Relevance Level Data</caption> <thead> <tr> <th>Relevance Level</th> <th>Number of Responses</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>25</td> <td>2.3%</td> </tr> <tr> <td>2</td> <td>61</td> <td>5.6%</td> </tr> <tr> <td>3</td> <td>283</td> <td>25.8%</td> </tr> <tr> <td>4</td> <td>386</td> <td>35.4%</td> </tr> <tr> <td>5</td> <td>362</td> <td>33%</td> </tr> </tbody> </table>	Relevance Level	Number of Responses	Percentage	1	25	2.3%	2	61	5.6%	3	283	25.8%	4	386	35.4%	5	362	33%	<ul style="list-style-type: none"> - Digital transformation project in vocational training until 2025, Point 2.5, Section II, Part II. Management and Administration: add: “Form mechanisms for analysis and mining of job data, training data in vocational training that help the government, industry and TVET institutions to predict human resources, plan training networks, direct training disciplines, occupations and scale... - Focus and invest more on infrastructure and human (x2) - There needs to be a huge digital data inventory in all aspects for ease of mining, management and use - Build new documents on learning outcomes on digital competency towards digital transformation and provide specific guidance on implementation for each training discipline (x17) - Propose for development of a nationally uniform LO system on DX - Digital transformation must be suitable for user competency and have specific digital competency assessment criteria (x4) - Digital competency needs to be updated and added regularly towards digital technology development and applications in practical work; basic units of
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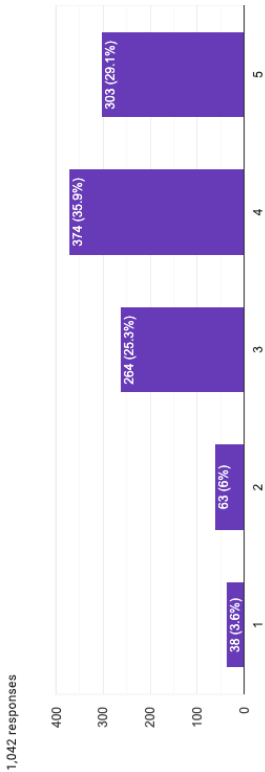
				<p>competency (including digital competency) in sets of NOSS needs to be developed, accredited and published separately to use for all occupations and facilitate updates and addition in accordance with labor market demands. (x4)</p> <ul style="list-style-type: none"> - Execute documents regulating on digital competency (if applicable) broadly to all levels - Consult expert opinions for appropriate, economical modifications that are responsive to the right audience - Develop specific targets that suit the characteristics of each locality and facility conditions of the TVET institutions (x5) - Documents should be more condensed, clearer without overlap or conflict (x8) - Ministries need to provide guidance on implementation according to the function of each field (x2) - Agree on using central-level guiding documents only, lower level shall not issue any more guiding documents. - Some content of the circulars need modification to suit DX - Digital transformation must start with a shift in awareness, at the same time develop infrastructure, Complete mechanisms, policies, regulatory framework, Assure the quality of human resources of the disciplines during implementation of DX - Provide training course on digital transformation, visit and learn from the experience of some agencies that successfully implemented DX
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				<ul style="list-style-type: none"> - There needs to be a regulation on a program before which other programs have been piloting on the level of modularization 																		
<p>2</p>	<p>ACCUMULATION AND RECOGNITION OF CREDITS</p> <ul style="list-style-type: none"> - Recognize courses/lectures on online learning platforms (e.g., coursera...) - Serve bridge programs between levels of training 	<p>Directive No. 24/CT-TTg Official dispatch No.1301/BLDTBXH Official dispatch No.345/TCGDNN-DTCQ Law on Education 2019 Law on Vocational Education and Training 2014 Resolution No. 52-NQ/TW Dec. 1982/2016/QD-TTg Dec. 749/2020/QD-TTg Cir. 03/2017/TT-BLDTBXH Cir. 07/2017/TT-BLDTBXH Cir. 08/2017/TT-BLDTBXH Cir. 08/2021/TT-BGDDT Cir. 09/2017/TT-BLDTBXH Cir. 09/2021/TT-BGDDT Cir. 17/2021/TT-BGDDT Cir. 23/2018/TT-BLDTBXH Cir. 26/2020/TT-BLDTBXH Cir. 27/2017/TT-BLDTBXH Cir. 33/2018/TT-BLDTBXH</p>	 <table border="1"> <thead> <tr> <th>Rating</th> <th>Number of Responses</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>24</td> <td>2.2%</td> </tr> <tr> <td>2</td> <td>55</td> <td>5.2%</td> </tr> <tr> <td>3</td> <td>282</td> <td>26.4%</td> </tr> <tr> <td>4</td> <td>389</td> <td>36.5%</td> </tr> <tr> <td>5</td> <td>317</td> <td>29.7%</td> </tr> </tbody> </table>	Rating	Number of Responses	Percentage	1	24	2.2%	2	55	5.2%	3	282	26.4%	4	389	36.5%	5	317	29.7%	<ul style="list-style-type: none"> - There should be a regulation of specific fields in digital transformation - Compulsory learning time for online learning should be regulated, with criteria for assessment of online training skills... - Develop new, specific documents/regulations providing clear guidance on module, credit accumulating training methods that is suitable for DX (x16) - Develop documents specifying online learning units, such as: how to learn theory; how to practice; how to examine; how to conduct final tests. - Regulations may specify subjects appropriate for online training - More detailed regulations may be added to implement individualized training - Equip facility to realize digital transformation - Add regulations on pandemic adaptive online training methods - Documents are annually reviewed for updates in accordance with the reality (x2) - Marking needs clear regulations and standards, minimizing cheating among learners - Make more realistic modifications and addition to Law on Education 2019 - Develop new, specific documents/regulations providing clear guidance on credit recognition, module accumulation in online training, examination, assessment and testing (x20) - Guidance from state management agencies needs to be implemented in detail. - Propose for consolidation into specific Circular issuance for a more realistic implementation by TVET institutions - There need to be documents/guidance specifying online training-related content such as: Usage guidance for teachers and students; training on program usage, training methods;
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				<ul style="list-style-type: none"> - Introduce forms of identification, such as biometrics... to ensure exact assessment of learning results when studying with online software; only then certification of online courses would become effective - Shorten waiting time for receipt of financial support 																		
3	<p>MODULARIZATI ON LEVEL (CURRICULUM, SUBJECT, LECTURE...)</p> <ul style="list-style-type: none"> - Prove flexibility of the curricula - Individualize learning 	<p>Decision No. 1982/2016/QD-TTg Directive No. 24/CT-TTg Official dispatch No.1301/BLDTBXH Official dispatch No.587/TCGDNN-DTCQ Law on Vocational Education and Training 2014 Dec. 1982/2016/QD-TTg Dec. 749/2020/QD-TTg Cir. 03/2017/TT-BLDTBXH Cir. 03/2017/TT-BLDTBXH Cir. 08/2017/TT-BLDTBXH Cir. 08/2021/TT-BGDDT Cir. 09/2017/TT-BLDTBXH Cir. 09/2021/TT-BGDDT Cir. 10/2017/TT-BGDDT Cir. 12/2017/TT-BLDTBXH Cir. 12/2017/TT-BLDTBXH Cir. 15/2017/TT-BLDTBXH Cir.17/2021/TT-BGDDT Cir. 26/2020/TT-BLDTBXH Cir. 28/2017/TT-BLDTBXH Cir. 29/2017/TT-BLDTBXH Cir. 31/2017/TT-BLDTBXH Cir. 33/2018/TT-BLDTBXH Cir. 39/2017/TT-BTTTT Cir. 42/2015/TT-BLDTBXH</p>	 <table border="1"> <thead> <tr> <th>Category</th> <th>Count</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>22</td> <td>2.1%</td> </tr> <tr> <td>2</td> <td>69</td> <td>6.5%</td> </tr> <tr> <td>3</td> <td>282</td> <td>26.5%</td> </tr> <tr> <td>4</td> <td>430</td> <td>40.4%</td> </tr> <tr> <td>5</td> <td>261</td> <td>24.5%</td> </tr> </tbody> </table>	Category	Count	Percentage	1	22	2.1%	2	69	6.5%	3	282	26.5%	4	430	40.4%	5	261	24.5%	<ul style="list-style-type: none"> - Develop new documents/regulations to suit the modularization level of digital transformation and documents for detailed guidance on implementation for each competency level (x22) - Define module and subject more clearly. Provide hard regulations: 1 credit equals how many theoretical lessons, how many practical lessons. Provide specific regulations again on blended subjects; as blended training include theory and practice in the same lesson, these can't be separated - Regulations are sufficient, may require more specification, however the flexibility must still be assured for the development of modules and credits in the training program, facilitating digital environment-based training and assessment - There need to be new documents regulating more suitable curricula and textbooks for digital transformation: particularly elementary training programs need regulation on occupation codes for all occupations; intermediate training programs need a shared framework for all agencies - Strengthening regulations on online training - Curricula are reviewed, modified and updated regularly in accordance with the reality of training (x3) - Provide guidance on final test and revision time are preannounced to avoid learner confusion
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				<ul style="list-style-type: none"> - Make modifications and addition in accordance with Law on Education 2019 - Regulations on individualized learning on online learning platform needs to be added - Increase funding for implementing agencies - Issue more daily teaching book forms suitable for modular programs - Issue electronic scorebook - There need to be specific regulations on facilities, equipment that align with the curricula - Beside online learning modules, there should be some flexible subjects so students can attend offline classes - Clear dissemination of DX-related documents to agencies - The curricula need to focus on building application or practical exercises for each module/subject, lectures are visually friendly, provide exact knowledge rather than focus on academic assessment of curricula. - Add methods for online testing and assessment of each test form (multiple choice, written, assignment, essay...) - Regulate the number of learning hours required for 1 credit - Add guidance on online training and testing for occupational practical subjects if necessary. - Specify for each discipline and field - Provide more advisors for those in need
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4	<p>INDIVIDUALIZE LEARNING</p> <p>- Selection of learning content according to the demands and ability of learner on digital platforms</p>	<p>Directive No. 24/CT-TTg Official dispatch No.1301/BLDTBXH Official dispatch No.345/TCGDNN-DTCQ Official dispatch No.587/TCGDNN-DTCQ Law on Education 2019 Law on Vocational Education and Training 2014 Dec. 117/2017/QD-TTg Dec. 749/2020/QD-TTg Cir. 03/2017/TT-BLDTBXH Cir. 04/2017/TT-BLDTBXH Cir. 08/2017/TT-BLDTBXH Cir. 08/2017/TT-BLDTBXH Cir. 09/2017/TT-BLDTBXH Cir. 12/2017/TT-BLDTBXH Cir. 17/2021/TT-BGDDT Cir. 17/2021/TT-BGDDT Cir. 28/2017/TT-BLDTBXH Cir. 29/2017/TT-BLDTBXH Cir. 31/2017/TT-BLDTBXH Cir. 33/2018/TT-BLDTBXH Cir. 42/2015/TT-BLDTBXH</p>	<table border="1"> <caption>997 responses</caption> <thead> <tr> <th>Category</th> <th>Count</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>36</td> <td>3.6%</td> </tr> <tr> <td>2</td> <td>67</td> <td>6.7%</td> </tr> <tr> <td>3</td> <td>272</td> <td>27.3%</td> </tr> <tr> <td>4</td> <td>329</td> <td>33%</td> </tr> <tr> <td>5</td> <td>293</td> <td>29.4%</td> </tr> </tbody> </table>	Category	Count	Percentage	1	36	3.6%	2	67	6.7%	3	272	27.3%	4	329	33%	5	293	29.4%	<ul style="list-style-type: none"> - Regulate Framework of digital competency for learners of elementary, intermediate and college levels - There should be specific regulations for implementation (4) - There is regulation assuring facility conditions, certification and recognition for teachers participating in online training - Theory must be integrated with practice to diversify the lesson and raise learners' interests - Develop new documents/regulations towards selection of learning content according to the demands and ability of learner on DX platforms (x17) - There needs to be a document specifying: learning methods; learning tools; learning time (maybe in the evening; online training doesn't need fixed time regulation but depends upon the trained entities) - Have more specific guidance to facilitate learners' accumulation of modules and credits to obtain diploma/certificate of their needs - Implement documents regulating individualized learning (if applicable) broadly to all levels - Add regulations on online teaching and learning - Detailed courses are reviewed, modified and updated regularly in accordance with the reality of training - There should be more flexibility in directing to adapt to the context of Covid-19 (such as MOET) - New documents should be developed for general and particular regulations on each trained entity nationwide that are suitable for digital transformation. - Agree on selection of learning content upon one's profession, but the number of subjects must be restricted, subjects need to be classified as basic, specialized or general subjects, and the number of each that students may choose in the beginning of the course. After selection, students are assigned to elementary, intermediate or college level based on the number of subjects selected; reselecting is not allowed - Shorten the implementing time
Category	Count	Percentage																				
1	36	3.6%																				
2	67	6.7%																				
3	272	27.3%																				
4	329	33%																				
5	293	29.4%																				

5	<p>ONLINE LEARNING EXAMINATION AND ASSESSMENT</p>	<p>Directive No. 24/CT-TTg Official dispatch No.1301/BLDTBXH Official dispatch No.345/TCGDNN-DTCQ Official dispatch No.587/TCGDNN-DTCQ Law on Education 2019 Law on Vocational Education and Training 2014 Dec. 749/2020/QD-TTg Cir. 03/2017/TT-BLDTBXH Cir. 09/2021/TT-BGDDT Cir. 10/2017/TT-BLDTBXH Cir. 17/2021/TT-BGDDT Cir. 23/2018/TT-BLDTBXH Cir. 28/2017/TT-BLDTBXH Cir. 33/2018/TT-BLDTBXH</p>	 <table border="1"> <thead> <tr> <th>Rating</th> <th>Number of Responses</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>38</td> <td>3.6%</td> </tr> <tr> <td>2</td> <td>63</td> <td>6%</td> </tr> <tr> <td>3</td> <td>264</td> <td>25.3%</td> </tr> <tr> <td>4</td> <td>374</td> <td>35.9%</td> </tr> <tr> <td>5</td> <td>303</td> <td>29.1%</td> </tr> </tbody> </table>	Rating	Number of Responses	Percentage	1	38	3.6%	2	63	6%	3	264	25.3%	4	374	35.9%	5	303	29.1%	<ul style="list-style-type: none"> - Quickly enact a circular guiding the implementation of examination and assessment in a digital environment, assuring the quality of training (x9) - Have clear regulations on forms and methods of online learning assessment - Develop new documents/regulations on testing and assessment in accordance with digital transformation (x13) - Modify documents and detailed guidance in accordance with digital transformation - There needs to be a document specifying online examination and testing methods; how to recognize completion of a course in a digital way (that is easy for both learners and teachers) - Quickly enact and implement documents regulating online training and learning - Regulations are reviewed, modified and updated regularly in accordance with the reality (x3) - Make modification and addition to Circular No. 33/2018/TT-BLDTBXH on diploma issuance, online testing, assessment and graduation examination and recognition of results, issuance of diplomas as formal training - There need to be training documents and practical training - Propose for development of a software for online testing and assessment - Documents should be developed for general and particular regulations on each trained entity nationwide that are suitable for digital transformation.
Rating	Number of Responses	Percentage																				
1	38	3.6%																				
2	63	6%																				
3	264	25.3%																				
4	374	35.9%																				
5	303	29.1%																				

				<ul style="list-style-type: none"> - Once confidentiality and objective monitoring during examination are implemented effectively, assessment of a student shall be done via application software-based tests - There is no guidance on online practical examination for TVET disciplines yet. 																		
6	<p>NEW TRAINING AND LEARNING METHODS SUITABLE FOR DX Blended learning and other methods</p>	<p>Directive No. 24/2021/CT-TTg Directive No. 24/CT-TTg Official dispatch No.1301/BLDTBXH Official dispatch No.2036/TCGDNN-DTCQ Official dispatch No.587/TCGDNN-DTCQ Law on Education 2019 Law on Vocational Education and Training 2014 Resolution No. 52-NQ/TW Dec. 117/2017/QD-TTg Dec. 749/2020/QD-TTg Cir. 03/2017/TT-BLDTBXH Cir. 08/2017/TT-BLDTBXH Cir. 09/2017/TT-BLDTBXH Cir. 09/2021/TT-BGDDT Cir. 17/2021/TT-BGDDT Cir. 27/2017/TT-BLDTBXH Cir. 28/2017/TT-BLDTBXH Cir. 31/2017/TT-BLDTBXH Cir. 33/2018/TT-BLDTBXH</p>	<table border="1"> <caption>Response Distribution Data</caption> <thead> <tr> <th>Category</th> <th>Count</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>29</td> <td>2.9%</td> </tr> <tr> <td>2</td> <td>61</td> <td>6%</td> </tr> <tr> <td>3</td> <td>278</td> <td>27.4%</td> </tr> <tr> <td>4</td> <td>352</td> <td>34.7%</td> </tr> <tr> <td>5</td> <td>294</td> <td>29%</td> </tr> </tbody> </table>	Category	Count	Percentage	1	29	2.9%	2	61	6%	3	278	27.4%	4	352	34.7%	5	294	29%	<ul style="list-style-type: none"> - Enact documents guiding flexible transformation between online and offline training (x3) - New, specific documents should be developed as for remote areas with limited number of equipment - Assign more practice exercise - There needs to be a document regulating a uniform online training platform. The Ministry should develop this platform independently for general, nationwide management. The platform should be easy to use and universalized to all kinds of users. - Propose for enactment of new documents and specific guidance on new training and learning methods towards digital transformation (x24) - The module 'Digital teaching' should be added to the further training program for elementary-level teachers, as online training is common for this level - Have instructions or solutions in case of disconnected network - New guidance on adaptation to the context of Covid-19 needs to be added and enacted. - Update more timely
Category	Count	Percentage																				
1	29	2.9%																				
2	61	6%																				
3	278	27.4%																				
4	352	34.7%																				
5	294	29%																				

				<ul style="list-style-type: none">- Empower leaders of TVET institutions to develop online training regulation which clearly articulates mandatory content such as class organization, teaching, testing, assessment and being responsible for online training quality assurance.- Have 2 school days for offline classes and group activities- There need to be specific regulations and requirements in further training of teacher of changes to new methods
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7	<p>DIGITAL INFRASTRUCTURE AND DIGITAL PLATFORM</p> <p>- Digital infrastructure, e.g., technological infrastructure; data infrastructure; technical infrastructure...</p> <p>- Digital platform, e.g., LMS; administrative platform</p>	<p>Directive No. 24/CT-TTg Official dispatch No.1301/BLDTBXH Official dispatch No.1617/TCGDNN Official dispatch No.2036/TCGDNN-DTCQ Official dispatch No.345/TCGDNN-DTCQ Official dispatch No.587/TCGDNN-DTCQ Law on Information technology 2006 Law on Vocational Education and Training 2014 Law on E-commerce Dec. 749/2020/QD-TTg Cir. 03/2017/TT-BLDTBXH Cir. 08/2017/TT-BLDTBXH Cir. 09/2021/TT-BGDDT Cir. 12/2017/TT-BLDTBXH Cir. 17/2021/TT-BGDDT Cir. 27/2017/TT-BLDTBXH Cir. 28/2017/TT-BLDTBXH Cir. 33/2018/TT-BLDTBXH</p>	<table border="1"> <caption>985 responses</caption> <thead> <tr> <th>Rating</th> <th>Count</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>28</td> <td>2.8%</td> </tr> <tr> <td>2</td> <td>71</td> <td>7.2%</td> </tr> <tr> <td>3</td> <td>267</td> <td>27.1%</td> </tr> <tr> <td>4</td> <td>347</td> <td>35.2%</td> </tr> <tr> <td>5</td> <td>272</td> <td>27.6%</td> </tr> </tbody> </table>	Rating	Count	Percentage	1	28	2.8%	2	71	7.2%	3	267	27.1%	4	347	35.2%	5	272	27.6%	<ul style="list-style-type: none"> - There needs to be a more specific regulation on infrastructure: rather than network system, specify whether it's hardware system, application software system (converting a written document to word, excel or PowerPoint file does not mean digital transformation) - Agree on 01 to 02 documents regulating this - Develop new documents/regulations on digital infrastructure towards digital transformation with specific guidance (x30) - A document needs to be enacted, regulating digital infrastructure standards that enables effective operation and exploitation in digital platforms in different levels of TVET (x4) - Conduct further IT training courses for staff, teachers and managers, closely follow the demand for work use, assure basic application standards, information security, effective use and exploitation of information systems at school and promote online training. - There should be specific regulations for each field and each locality's realistic conditions.
Rating	Count	Percentage																				
1	28	2.8%																				
2	71	7.2%																				
3	267	27.1%																				
4	347	35.2%																				
5	272	27.6%																				

8	<p>DIGITAL LEARNING RESOURCES</p> <ul style="list-style-type: none"> - Development of digital learning resources; - Intellectual property rights for digital learning resources; - Accreditation; - Use and sharing of digital learning resources 	<p>Directive No. 24/CT-TTg Official dispatch No.1301/BLDTBXH Official dispatch No.2036/TCGDNN-DTCQ Law on Information technology 2006 Law on Education 2019 Law on Vocational Education and Training 2014 Law on Library 2019 Decree No. 49/2018/ND-CP Resolution No. 52-NQ/TW Dec. 2175/QĐ-BVHTTDL Dec. 749/2020/QĐ-TTg Dec. 868/2010/BLDTBXH Cir. 03/2017/TT-BLDTBXH Cir. 09/2017/TT-BLDTBXH Cir. 09/2021/TT-BGDDT Cir. 15/2017/TT-BLDTBXH Cir. 17/2021/TT-BGDDT Cir. 20/2018/TT-BGDDT Cir. 21/2017/TT-BGDDT Cir. 23/2018/TT-BLDTBXH Cir. 28/2017/TT-BLDTBXH Cir. 33/2018/TT-BLDTBXH Document No. 1810/TCGDNN-KDCL Consolidated document No. 1313/VBHN-BLDTBXH</p>	<table border="1"> <caption>Response Data</caption> <thead> <tr> <th>Category</th> <th>Number of Responses</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>28</td> <td>2.8%</td> </tr> <tr> <td>2</td> <td>61</td> <td>6.1%</td> </tr> <tr> <td>3</td> <td>301</td> <td>30.1%</td> </tr> <tr> <td>4</td> <td>324</td> <td>32.4%</td> </tr> <tr> <td>5</td> <td>286</td> <td>28.6%</td> </tr> </tbody> </table>	Category	Number of Responses	Percentage	1	28	2.8%	2	61	6.1%	3	301	30.1%	4	324	32.4%	5	286	28.6%	<ul style="list-style-type: none"> - Invest on new technology adaptive DX learning tools - Develop specific regulations on learning resources for theory; practice; blended teaching and how to protect copyrights when uploading to the Internet (easy ways for teachers to register for content copyrights); on specific requirements for accredited entities - Increase regulation on online IT application software - Production should be assigned to a specialized organization for shared use, similar to hardcopy materials producers. - A document should be developed, regulating specific guidance on Development of digital learning resources; Intellectual property rights for digital learning resource; Accreditation; Use and sharing of digital learning resources (x25) - Database must be developed for reference by officials, teachers and students - Massive development and addition of digital learning resources is needed - The materials should be more diverse and updated - Learners pay for the curricula, including intellectual property cost - Accreditation should be fieldwork, focusing on key matters and discard redundant formal procedures - Enact more specific regulations for each discipline, occupation - Increase support value
Category	Number of Responses	Percentage																				
1	28	2.8%																				
2	61	6.1%																				
3	301	30.1%																				
4	324	32.4%																				
5	286	28.6%																				

<p>9</p>	<p>TEACHERS AND LEARNERS - Framework of reference for digital competency - Responsibilities and benefits of DX; - Digital environment-based teaching and learning culture</p>	<p>Directive No. 24/CT-TTg Official dispatch No.1673/LĐTBXH-TCGDNN Official dispatch No.345/TCGDNN-DTCQ Official dispatch No.587/TCGDNN-DTCQ UNESCO ICT Competency Framework for Teachers. Version 3, 2018 Law on Education 2019 Law on Vocational Education and Training 2014 Resolution No. 52-NQ/TW Dec. 117/2017/QĐ-TTg Dec. 1982/2016/QĐ-TTg Dec. 749/2020/QĐ-TTg Cir. 03/2014/TT-BTTTT Cir. 03/2017/TT-BLĐTBXH Cir. 07/2017/TT-BLĐTBXH Cir. 08/2017/TT-BLĐTBXH Cir. 08/2021/TT-BGDĐT Cir. 09/2017/TT-BLĐTBXH Cir. 09/2021/TT-BGDĐT Cir. 12/2017/TT-BLĐTBXH Cir. 17/2021/TT-BGDĐT Cir. 20/2018/TT-BGDĐT Cir. 21/2017/TT-BGDĐT Cir. 23/2018/TT-BLĐTBXH Cir. 27/2017/TT-BLĐTBXH Cir. 28/2017/TT-BLĐTBXH Cir. 33/2018/TT-BLĐTBXH</p>	<table border="1"> <caption>Response Distribution</caption> <thead> <tr> <th>Rating</th> <th>Number of Responses</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>38</td> <td>3.9%</td> </tr> <tr> <td>2</td> <td>60</td> <td>6.1%</td> </tr> <tr> <td>3</td> <td>273</td> <td>27.9%</td> </tr> <tr> <td>4</td> <td>337</td> <td>34.4%</td> </tr> <tr> <td>5</td> <td>271</td> <td>27.7%</td> </tr> </tbody> </table>	Rating	Number of Responses	Percentage	1	38	3.9%	2	60	6.1%	3	273	27.9%	4	337	34.4%	5	271	27.7%	<ul style="list-style-type: none"> - There needs to be a regulation on engagement time between teachers and learners - Develop new documents/regulations towards digital transformation with specific guidance (x29) - Develop a document regulating required knowledge standards for trainers and teachers. Provide free training for those implementing DX. Regulate how to teach and learn; Focus on one focal point for management (such as training department); Behavior, speech and outfits when teaching. - Too many overlapping software without data synchronization - Enhance IT application - Documents are updated annually in accordance with the reality of training (x3) - Teachers must be trained - Develop framework for digital competency for TVET teachers to facilitate development of digital competency and digital skill-based curricula; assign responsibilities to all lecturers, those who must obtain consistent knowledge and well-developed professional knowledge in terms of purpose, scale and content; in order to educate learners – labors who acquire necessary skills to do their jobs effectively, safely and ethically in diverse, more and more digitally supported environments... - There need to be regulations on specific benefits and exact assessment based on competency
Rating	Number of Responses	Percentage																				
1	38	3.9%																				
2	60	6.1%																				
3	273	27.9%																				
4	337	34.4%																				
5	271	27.7%																				

<p>10</p>	<p>EDUCATIONAL GOVERNANCE AND ADMINISTRATION</p> <ul style="list-style-type: none"> - Governance and administration by regulators and TVET institutions in a digital environment - DX strategies - TVET database 	<p>Directive No. 24/CT-TTg Official dispatch No.1301/BLDTBXH Official dispatch No.1617/TCGDNN Official dispatch No.1673/LĐTBXH-TCGDNN Official dispatch No.587/TCGDNN-DTCQ Law on Information technology 2006 Law on Education 2019 Law on Vocational Education and Training 2014 Law on Management and Use of Public Property Law on Cybersecurity Dec. 749/2020/QĐ-TTg Cir. 03/2017/TT-BLĐTBXH Cir. 08/2017/TT-BLĐTBXH Cir. 09/2017/TT-BLĐTBXH Cir. 09/2021/TT-BGDĐT Cir. 12/2017/TT-BLĐTBXH Cir. 17/2021/TT-BGDĐT Cir. 21/2017/TT-BGDĐT Cir. 23/2018/TT-BLĐTBXH Cir. 32/2019/TT-BLĐTBXH Cir. 33/2018/TT-BLĐTBXH</p>	<table border="1"> <caption>Response Data</caption> <thead> <tr> <th>Category</th> <th>Count</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>32</td> <td>3.2%</td> </tr> <tr> <td>2</td> <td>60</td> <td>6.1%</td> </tr> <tr> <td>3</td> <td>292</td> <td>29.6%</td> </tr> <tr> <td>4</td> <td>310</td> <td>31.4%</td> </tr> <tr> <td>5</td> <td>292</td> <td>29.6%</td> </tr> </tbody> </table>	Category	Count	Percentage	1	32	3.2%	2	60	6.1%	3	292	29.6%	4	310	31.4%	5	292	29.6%	<ul style="list-style-type: none"> - Develop new documents/regulations towards digital transformation with specific guidance (x28) - The Ministry should build a shared foundation as the tree trunk, provinces are branches while schools and centers are twigs. Data of a province is stored in its server. Shared data is stored in the Ministry's server. Building one complete tree on one platform makes it easy to manage education and property rights. - There are clear directive documents throughout the TVET system - Documents are updated annually in accordance with the reality of training (x2) - Clearly regulate management, administration, especially information and image security... in the internet environment - Provide training and administrative systems for agencies - Provide quicker updates - A companion to guide implementation of course is still needed, this maybe a counselor or teacher - Enact more specific regulations for each discipline, occupation - Increase time of application - High confidentiality
Category	Count	Percentage																				
1	32	3.2%																				
2	60	6.1%																				
3	292	29.6%																				
4	310	31.4%																				
5	292	29.6%																				

<p>11</p>	<p>LIST OF INFORMATION TECHNOLOGY OCCUPATIONS AND THEIR CURRICULA The training content is update to meet requirements of the labour market</p>	<p>Directive No. 24/CT-TTg Official dispatch No.587/TCGDNN-DTCQ Law on Education 2019 Law on Vocational Education and Training 2014 Dec. 01/2017/QD-TTg Dec. 117/2017/QD-TTg Dec. 1232/2021/QD-TTg Dec. 749/2020/QD-TTg Cir. 03/2017/TT-BLDTBXH Cir. 04/2017/TT-BLDTBXH Cir. 06/2019/TT-BLDTBXH Cir. 08/2021/TT-BGDDT Cir. 09/2017/TT-BLDTBXH Cir. 09/2021/TT-BGDDT Cir. 12/2017/TT-BLDTBXH Cir. 12/2017/TT-BLDTBXH Cir. 17/2021/TT-BGDDT Cir. 20/2009/TT-BLDTBXH Cir. 21/2017/TT-BGDDT Cir. 24/2017/TT-BGDDT Cir. 25/2019/TT-BLDTBXH Cir. 26/2020/TT-BLDTBXH Cir. 27/2017/TT-BLDTBXH Cir. 28/2017/TT-BLDTBXH Cir. 44/2018/TT-BLDTBXH Cir. 45/2017/TT-BTTTT</p>	<table border="1"> <caption>974 responses</caption> <thead> <tr> <th>Category</th> <th>Count</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>23</td> <td>2.4%</td> </tr> <tr> <td>2</td> <td>58</td> <td>6%</td> </tr> <tr> <td>3</td> <td>279</td> <td>28.6%</td> </tr> <tr> <td>4</td> <td>328</td> <td>33.7%</td> </tr> <tr> <td>5</td> <td>286</td> <td>29.4%</td> </tr> </tbody> </table>	Category	Count	Percentage	1	23	2.4%	2	58	6%	3	279	28.6%	4	328	33.7%	5	286	29.4%	<ul style="list-style-type: none"> - Must be implemented in the allocated time - Develop new documents/regulations towards digital transformation with specific guidance for implementation (x16) - Develop training documents of in-depth programming training for teachers teaching IT-related occupations to promote programming and database-related occupations. - The regulations should be flexible so TVET institutions can proactively update their curricula in accordance with the demands of learners and labour market - The curricula are reviewed, modified, updated regularly in accordance with the reality of training, meeting labour market demands (x3) - Propose for continuous addition to the list of information technology subjects to match with regional and global reality - There needs to be a document/regulation appointing enterprises to cooperate with TVET institutions in the development of curricula that meet the requirements of the labour market - Increase promotion - Quicker updates - Develop software to assist school administration as well as monitoring by superior authorities - Add to the framework of digital competency
Category	Count	Percentage																				
1	23	2.4%																				
2	58	6%																				
3	279	28.6%																				
4	328	33.7%																				
5	286	29.4%																				

				<ul style="list-style-type: none"> - Have a realistic approach upon the demands and needs of the labour market, invest on key knowledge that the market requires. Eliminate or reduce redundant formal knowledge - Have a shared, uniform program - Enact more specific regulations for each discipline, occupation
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Appendix 5: List of legal documents

Seq.	No. of documents	Date of issuance	Title
I	LAW		
1.	51/2005/QH11	29/11/2005	Electronic transactions
2.	67/2006/QH11	29/6/2006	Law on Information Technology
3.	38/2013/QH13	16/11/2013	Law on Employment
4.	74/2014/QH13	27/11/2014	Law on Vocational Education
5.	15/2017/QH14	21/6/2017	Law on Management and Use of Public Property
6.	24/2018/QH14	12/6/2018	Law on Cybersecurity
7.	43/2019/QH14	14/6/2019	Law on Education
8.	45/2019/QH14	20/11/2019	Labor Code
9.	46/2019/QH14	21/11/2019	Law on Library
II	DECREE/RESOLUTION		

Seq.	No. of documents	Date of issuance	Title
1.	143/2016/ND-CP	14/10/2016	On investment and operation in Vocational Education and Training (<i>modified and added by Decree No. 140/2018/ND-CP and Decree No. 15/2019/ND-CP</i>)
2.	49/2018/ND-CP	30/3/2018	On accreditation of vocational education and training
3.	52-NQ/TW	27/9/2019	On a number of guidelines and policies to actively participate in the fourth industrial revolution
III	DECISION		
1.	1982/2016/QD-TTg	18/10/2016	On approval for Vietnamese qualifications framework
2.	01/2017/QD-TTg	17/01/2017	Issuance of List of education and training of the national education system
3.	117/2017/QD-TTg	25/01/2017	On approval for the project “Increase IT application in management and support of teaching-learning, scientific research contributing to education and training quality improvement in the period 2016 – 2020, towards 2025”
4.	18/2017/TTg-CP	31/5/2017	On bridge programs between intermediate, college level with university level
5.	749/2020/QD-TTg	03/6/2020	On approval of “National digital transformation program until 2025, towards 2030”
6.	206/QD-TTg	11/02/2021	On approval of “Digital transformation program of libraries until 2025, towards 2030”
7.	1232/2021/QD-TTg	15/7/2021	Approving plan for implementation of National Qualifications Reference Framework for vocational education levels during the period 2021 – 2025

Seq.	No. of documents	Date of issuance	Title
8.	868/2010/BLDTBXH	16/07/2010	Promulgating the Process of production, accreditation and video film learning material for elementary-level vocational training programs and 3-month or shorter vocational training programs
9.	2175/QD-BVHTTDL	23/7/2021	Planning for implementation of Digital transformation program of libraries until 2025
10.	1446/QD-TTg	30/8/2021	On 20 occupations of “training and retraining program to meet the requirements of the fourth Industrial Revolution”.
IV	DIRECTIVE		
1.	24/CT-TTg	28/5/2020	Accelerating the development of occupationally skilled human resources, helping raise productivity and national competitiveness in the new situation
V	OFFICIAL DISPATCH/DOCUMENT		
1.	Official dispatch No. 786/LDTBXH-TCGDNN	02/03/2018	On linking vocational training with enterprises
2.	Official dispatch No. 589/TCGDNN-DTCQ	29/3/2018	On promoting cooperation between TVET institutions and enterprises
3.	Official dispatch No. 454/TCGDNN-KDCL	25/3/2019	Guiding assessment of TVET facility accreditation standards for elementary schools, colleges
4.	Official dispatch No. 345/TCGDNN-DTCQ	21/02/2020	On promoting IT application in enrolment and training in the context of COVID-19

Seq.	No. of documents	Date of issuance	Title
5.	Official dispatch No. 587/TCGDNN-DTCQ	17/3/2020	On promoting IT application in training in the context of COVID-19
6.	Official dispatch No. 1301/BLDTBXH	14/4/2020	Guiding management, training, testing and assessment of online training
7.	Official dispatch No. 1617/TCGDNN-DTCQ	21/7/2020	On deployment of a software managing enrolment, graduation and employment data
8.	Official dispatch No. 2036/TCGDNN-DTCQ	16/9/2021	On online graduation examination of intermediate, college levels
9.	Consolidated document No. 1313/VBHN-BLDTBXH	05/4/2019	Regulating accreditation of vocational education training
10.	Document No. 1810/TCGDNN-KDCL	17/8/2021	On quick assessment according to the drafted criteria and standards for high-quality colleges
V	CIRCULAR		
1.	20/2009/TT-BLDTBXH	29/11/2009	Regulations on framework for intermediate-level and college-level vocational training of computer and information technology discipline
2.	42/2015/TT-BLDTBXH	20/10/2015	Regulations on intermediate-level training

Seq.	No. of documents	Date of issuance	Title
3.	56/2015/TT-BLDTBXH	24/12/2015	Guiding the development, appraisal and promulgation of national occupational skills standard
4.	03/2017/TT-BLDTBXH	01/03/2017	Prescribing the procedures for development, appraisal and issuance of the curriculum; compiling, selection, appraisal of the textbooks for intermediate, college qualification training
5.	04/2017/TT-BLDTBXH	02/03/2017	Promulgating the list of training occupations of level IV, the intermediate and college levels
6.	06/2017/TT-BLDTBXH	08/03/2017	On recruitment, employment, and training applicable to VET teachers
7.	07/2017/TT-BLDTBXH	10/03/2017	On working regime for VET teachers
8.	08/2017/TT-BLDTBXH	10/03/2017	On standards in qualifications of VET teachers
9.	09/2017/TT-BLDTBXH	13/03/2017	Stipulating implementation training organization of intermediate, college qualification curricula according to year-based or module, or credit-based form; regulation on test, examination, graduation recognition
10.	10/2017/TT-BLDTBXH	13/03/2017	Stipulating format of diploma of intermediate, college qualification; printing, managing, granting, withdrawing, annulling diploma of intermediate, college qualification
11.	12/2017/TT-BLDTBXH	20/04/2017	Stipulating minimum knowledge amount and required competences for learners upon graduation of the intermediate and college qualification level

Seq.	No. of documents	Date of issuance	Title
12.	14/2017/TT-BLDTBXH	25/05/2017	Development, accreditation and issuance of econo-technical norms for vocational training
13.	15/2017/TT-BLDTBXH	08/06/2017	Stipulating VET accreditation criteria, standards
14.	27/2017/TT-BLDTBXH	21/9/2017	Stipulating transfer between levels of vocational training
15.	28/2017/TT-BLDTBXH	15/12/2017	Stipulating the quality assurance system of TVET institutions
16.	29/2017/TT-BLDTBXH	15/12/2017	Stipulating cooperation of training implementation
17.	31/2017/TT-BLDTBXH	28/12/2017	Stipulating part-time training of college, intermediate and elementary level
18.	03/2018/TT-BLDTBXH	15/6/2018	Stipulating standards of professional title for vocational training officers
19.	08/2018/TT-BLDTBXH	14/8/2018	Stipulating econo-technical norms on vocational training of intermediate, college level for these occupations: Industrial electricity; Refrigeration and air conditioning engineering; Foundation equipment operation; Boom truck crane operation; Construction engineering; Plant protection; Aquatic products processing and preserving; Computer network administration; Petroleum and gas business administration
20.	11/2018/TT-BLDTBXH	26/9/2018	Stipulating curriculum of Informatics in the block of general subjects in intermediate, college qualification training programs
21.	23/2018/TT-BLDTBXH	06/12/2018	Regulation on requirements of records, books in intermediate, college qualification training

Seq.	No. of documents	Date of issuance	Title
22.	33/2018/TT-BLDTBXH	26/12/2018	Stipulating college, intermediate and elementary qualification training in the forms of distance training, guided self-study
23.	44/2018/TT-BLDTBXH	28/12/2018	Stipulating minimum knowledge amount and required competences for learners upon graduation of the intermediate and college qualification level for computer and information technology-related occupations
24.	06/2019/TT-BLDTBXH	28/01/2019	On addition of training disciplines, occupations to the list of training occupations of level IV, the intermediate and college levels issued in the Circular No. 04/2017/TT-BLDTBXH dated 3/2/2017 by the Minister of Labors, Invalids and Social Affairs
25.	20/2019/TT-BLDTBXH	23/12/2019	Stipulating minimum knowledge amount and required competences for learners upon graduation of the intermediate and college qualification level for business, administrative and legal occupations
26.	25/2019/TT-BLDTBXH	24/12/2019	Stipulating econo-technical norms on vocational training of intermediate, college level for some occupations of Electricity & electronics; Information technology; Construction, architecture and service
27.	27/2019/TT-BLDTBXH	25/12/2019	Stipulating minimally required list of equipment for intermediate, college level vocational training for some technological, technical occupations
28.	31/2019/TT-BLDTBXH	30/12/2019	Stipulating standards, conditions, content and form of testing or review for promotion of professional title for vocational training officers

Seq.	No. of documents	Date of issuance	Title
29.	32/2019/TT-BLDTBXH	30/12/2019	Stipulating standards for training and research facilities allowed to provide further training on promotion of professional title for vocational training officers
30.	38/2019/TT-BLDTBXH	30/12/2019	Guiding the building of a safe, healthy and friendly educational environment, and violence prevention and control in vocational education institutions
31.	15/2020/TT-BLDTBXH	28/12/2020	Stipulating minimally required list of equipment for intermediate, college level vocational training for 41 training disciplines, occupations
32.	16/2020/TT-BLDTBXH	28/12/2020	Stipulating econo-technical norms on vocational training of intermediate, college level for 46 training disciplines, occupations
33.	20/2020/TT-BLDTBXH	30/12/2020	Stipulating facilities to implement further training on pedagogical knowledge for VET teachers
34.	21/2020/TT-BLDTBXH	30/12/2020	Modification and addition to some articles of Circular No. 08/2017/TT-BLDTBXH dated 3/10/2017 by the Minister of Labors, Invalids and Social Affairs on standards in qualifications of VET teachers
35.	26/2020/TT-BLDTBXH	30/12/2020	Stipulating the list of training disciplines, occupations of level IV, intermediate and college level
36.	10/2021/TT-BLDTBXH	10/9/2021	Stipulating 116 econo-technical norms for training disciplines, occupations of intermediate, college level

Seq.	No. of documents	Date of issuance	Title
37.	03/2014/TT-BTTTT	11/3/2014	Stipulating Standard skills for information technology usage
38.	39/2017/TT-BTTTT	15/12/2017	Stipulating a standard list of IT applications among State agencies
39.	41/2017/TT-BTTTT	19/12/2017	Regulation on using digital signature for electronic documents in State agencies
40.	45/2017/TT-BTTTT	29/12/2017	Regulation on standards of professional title for vocational training officers of IT occupations
41.	01/2019/TT-BNV	24/1/2019	Stipulating the process of exchange, store, process electronic documents in clerical work, basic functions of electronic document management system during the work process of agencies and organizations
42.	07/2015/TT-BGDDT	16/4/2015	Stipulating minimum knowledge amount and required competences for learners upon graduation of the university qualification level and the process of curriculum development, accreditation and issuance of the university, master and doctoral level
43.	10/2017/TT-BGDDT	28/4/2017	Stipulating regulations on distance learning at university level
44.	21/2017/TT-BGDDT	06/9/2017	Stipulating IT application in Internet-based further training for teachers, staff and officers of educational management
45.	24/2017/TT-BGDDT	10/10/2017	Stipulating the list of training disciplines, occupations of level IV, university level
46.	07/2017/TT-BGDDT	15/3/2017	Regulation on affiliate training of university level
47.	20/2018/TT-BGDDT	22/8/2018	Stipulating professional standards requirements for general education teachers

Seq.	No. of documents	Date of issuance	Title
48.	08/2021/TT-BGDDT	18/3/2021	Stipulating regulations on university qualification level training
49.	09/2021/TT-BGDDT	30/3/2021	Regulations on management and organization of online teaching in general education institutions and continuing education institutions
50.	17/2021/TT-BGDDT	22/6/2021	Regulations on providing for standards and formulation, appraisal and promulgation of training programs of higher education

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