TECHNICAL VOCATIONAL EDUCATION AND TRAINING (TVET) MODEL IN THE DISRUPTIVE TECHNOLOGY ERA

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ABSTRACT

This research contains objects to study TVET management conditions. In the Disruptive Technology era, TVET management models were developed. Buddhist style in disruptive technology and proposed TVET management style Buddhist genres of the Disruptive Technology era Focus on presenting vocational education management models by studying current problems and proposing development models and approaches to benefit the drive for vocational education management using mixed research, quantitative data from a sample of instructors. Under the Office of the Vocational Education Commission, 430 examples of qualitative data from interviews with 13 experts, group discussions, 9 experts.

There are two stages of development: 1) Form model creation, studying relevant theoretical concepts and research, and information from expert interviews, 2) Examining the model's fidelity with expert evaluation.

Inputs: *TVET must adapt by leading Digital technology (Ubiquitous computing, collaboration technologies, extended reality technologies, AI, and Blockchain) integrated with teaching and learning. Organize students-based education. It is open to everyone to access education and to learn throughout their lives.*

Process: Consists of 4 activities: 1) administration, 2) teaching, instructor-centered, coaching, consulting, enhancing knowledge, building thinkers, learners. Create ideas Self-learning, self-reliance, activities, emphasis on how to think, collaborate. Innovate and media/content with open educational resources 3) Internships cooperate with bilateral establishments Cooperative Education and Factory Training and 4) Instructor Skills

Output/Outcome: *Learner skills include 1) technology integration skills and 2) Soft Skills: problem-solving skills, 4C's skills.*

Feedback /Improvements: Includes 1) Internal Quality Assessment 2) Research on Collaboration with Labor Market Demand 3) Research, Evaluation of Student Internships.

Keywords: Model, Management, TVET, Disruptive Technology.

INTRODUCTION

It is estimated that over the next 15 years, 14% of the workforce is at high risk of being replaced by automation, and another 30% face changes in skills used in the workforce. Many countries worldwide have struggled with the inability to create young people and working-class people with work skills and life skills high enough to face disruptive technology. Affect to

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changes in work and employment. Disruptive technology is a term that describes the large-scale changes that have occurred from modern technology of robotics and automation (Hynes & Elwell, 2016). It will have an immediate and severe impact on careers and work skills, a vital part of the fourth industrial revolution.

In Bower & Christensen's article *"Disruptive technology: catch the wave,"* he said that some new technologies could destroy or change the order of existing market domination or even create new markets (Bower & Christensen, 1995). And in 1997, Clayton et al. said that the model of technological development, Sustaining Technology, was a gradual improvement and that the form of Disruptive Technology, a new storm, may initially be incomplete but can improve rapidly and efficiently beyond mainstream technology. Technology forecasters have identified a group of disruptive technology, artificial intelligence, 3D printing, advanced materials, and nanotechnology that create and expand each other, affecting socioeconomic, political, geographic, and population factors (Manyika et al., 2013; World Economic Forum, 2016).

According to the National Economic and Social Development Board (NEC), specify the quarter unemployment rate 3 (2017) at 1.2%, or 450,000 unemployed, 0.9% higher than the same period last year, 1% or 400,000 above the standard threshold. The use of industrial machinery is increasing, but the use of the industry is in line with the government's Thailand 4.0 policies, and the industry needs to use machinery in part because Thailand is moving into an aging society. The proportion of older people now reaches 10% of the population of 67 million, and in the future, it will increase to 20%, so the industry must prepare for production processes in line with people of working age due to lower birth rates.

For Thailand, *"Thai People's Development 4.0"* is the most critical factor in driving the country from middle-income trap countries to high-income countries. The ideal educational arrangement for the development of Thai people 4.0 is TVET education and training, which is recognized worldwide for its role in preparing people to participate in the creation of work values and critical sources of the workforce and skilled workforces, and critical skills in the 21 century for TVET learners including 1) science, technology, engineering, mathematics (STEM), 2) problem-solving, and 3) 4C's (critical thinking). Communication, collaboration, and creativity)

This research contains objects to study TVET management conditions. In the Disruptive Technology era, TVET management models were developed. Buddhist style in disruptive technology and proposed TVET management style Buddhist genres of the Disruptive Technology era Focus on presenting vocational education management models by studying current problems and proposing development models and approaches to benefit the vocational education management drive.

LITERATURE REVIEW

The concepts and theories involved in this research consist of two parts: 2.1) concepts about Disruptive Technologies and effects 2.2) concepts on vocational education arrangements. Technical Vocational Education and Training (TVET).

Concept about Disruptive Technologies

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Disruptive technology refers to innovations or technologies used to create markets and value products that apply technology and severely impact the market of existing products, potentially causing businesses that use traditional technologies to be knocked down or closed, unlike conventional innovations for efficiency-enhancing purposes. Increase product quality or reduce traditional route costs only. In its report, the McKinsey Global Institute identified 12 technologies that would influence global change.

Mobile Internet is a tool that uses Internet technology to connect with the world, such as mobile banking, for financial transactions over the Internet. Automation of Knowledge Work is a technology or intelligent and intelligent software used to diagnose diseases to achieve accuracy or legal analysis. The Internet of Things implants smallest to most miniature sensors to transmit communications, which can be used, such as recognizing the quality of the soil from sensors sprinkled in the soil, knowing which crops should be grown with the best yield. Cloud computing is a data storage technology and software that enables small businesses to compete with large businesses without investing in a high computer. Advanced robotics technology is used in surgery to minimize patients' impact and accurate surgical outcomes. Autonomous vehicles are technologies that are used to replace agricultural or forestry exploration, as well as militarily. Next-Generation Genomics is an improved technology that develops genes to treat diseases. Next-generation storage is the creation of Fuel Cells for use in electric vehicles and hybrid cars. 3D Printing technology is a 3D printing system that reduces the cost of production of goods by being used in dental and medical applications. Advanced Materials technology is always the production of new materials such as self-cleaning materials—ultra-strong and light. Advanced Oil and Gas Exploration and Recovery is a technology that advances in pioneering oil and gas mining. It can make more oil and gas. Renewable Electricity Technology: The technology generates electricity from sources that never end, such as sunlight, wind, waves, hot springs.

Effects of Disruptive Technology

Christensen & Raynor (2003) classified the technology into two categories: sustaining technologies, a technology-focused on improving the efficiency of products in traditional mechanical systems. The other type of technology is called Disruptive technologies, which develop products/services to have new systems and cheaper. Disruptive technology may or may not be the latest technology, perhaps an existing one. However, there are changes in specific market elements, such as quality, production process efficiency, cost, or price, making these technologies the right conditions desirable to become popular with the market.

Concept about Vocational Education Educational & Training Techniques (TVET)

The relevant concepts and theories in this section include 1) meaning, vocational education, educational techniques and training (TVET), and 2) the skills required for TVET in the 21 century as follows: Technical Vocational Education and Training (TVET) is recognized worldwide for its role in preparing people to participate in creating work value and skilled sources of the workforce. According to a 2001 joint publication by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the International Labour Organization (ILO) on Vocational Education and Technical Studies and Training for the 21 Century, TVET is defined as 1) as an essential component of the ordinary line, 2) prepares

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people into the profession and the world of work effectively (Oviawe et al., 2017). Similarly, UNESCO (2009) defines TVET as public and private educational institutions in many forms. Formal or informal education is intended to provide all community members with access to this learning path throughout their lives.

From the above definition, TVET aims to eliminate ignorance. Increase knowledge, develop skills, and cultivate the attitudes necessary to enter the profession and advance (Kukoyi, 2009), in line with the concept of Instrumental, explaining that TVET's goal is to develop people to their full potential. With the environment in mind, Empower people for sustainable development, provide lifelong education, have professional qualifications, manage open and flexible learning. Certified and compared to transfer experience, high priority to vocational education by designating it as a national agenda. Investment reforms have been implemented in line with the development plan. There are benchmarks for indicators in quality management; there is a link between different studies. Continuing education and work Use performance-based learning with the core skills, skills needed for lifestyle. Personnel must have the right qualifications, quality, and qualifications, with continuous improvements for the status of graduates and professional workers to be comparable to other professional fields.

Reeve (2016) wrote an article titled 21st-century skills students need in technical and vocational education and training (TVET 21). And develop teaching and learning based on current educational concepts and practices. It also means providing the critical skills needed in the 21 century, critical skills in the 21 century for TVET learners, and guiding how to build these skills in TVET programs, including science, technology, engineering, mathematics (STEM), problem-solving, and 4C's (critical thinking, communication, collaboration, and creativity), which are consistent with the concepts in Valerie Pong Prabhyai's article (2017). The necessary 21 skills of technical and vocational education learners in Thailand, the management of technical and vocational education in Thailand. Those involved need to provide students with core knowledge and key skills of the 21 century: 1) STEM skills, 2) problem-solving skills, and 3) 4 C's skills.

RESEARCH METHODS

Research Framework shown in Figure 1 shows the research concept framework.

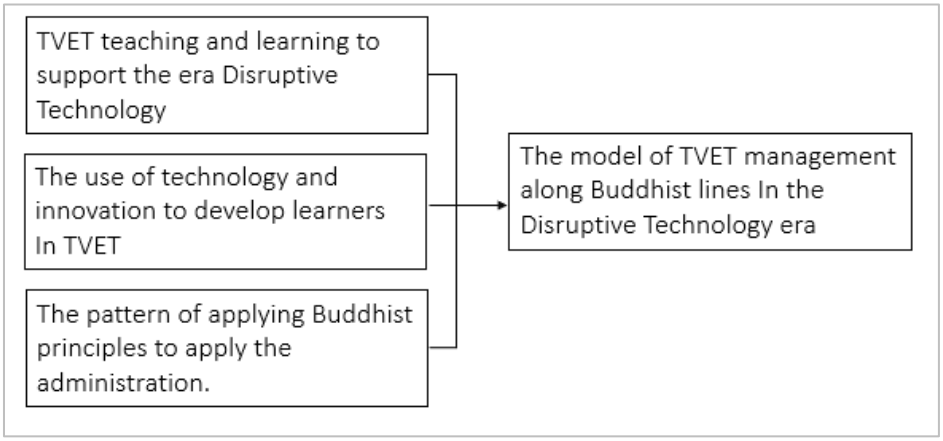

FIGURE 1

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THE RESEARCH CONCEPT FRAMEWORK

This research mixed methods research is used by quantitative research and qualitative research. An essential characteristic of qualitative research is qualitative data collection, including feelings. Opinions, beliefs, values, and attitudes of individuals regarding the management of Buddhist TVET in the Disruptive Technology era, data collection methods are in-depth interviews and focus groups, analyzing data with interpretation analysis. This process involves finding ideas that can describe and explain them to obtain more reliable and weighty information.

Populations and samples a group of informants in quantitative research is called a sample, qualitative research section, a group of targeted informants. Seung has the following details in selecting a group of informants: Quantitative research, the population used in this study includes vocational education personnel who teach under the office of the vocational education commission as of Table 1.

Table 1
THE NUMBER OF VOCATIONAL EDUCATION PERSONNEL TEACHING. UNDER THE OFFICE OF THE VOCATIONAL EDUCATION COMMISSION

Teacher	Tutor	Teacher Assistant	Government Employees (Teachers)	Total	
14,873	10,236	1,386	4,024	30,519	

Source: Information Technology Group for Vocational Education Management

Samples used in this research the researchers determined a sample from the vocational education personnel who were teaching. Under the Office of the Vocational Education Commission, 30,519 people, calculated:

$$n = \frac{N}{1 + (Ne^2)}$$

n=Number of samples
N=Population
e=tolerances (in this research defined = 0.05)
Substitute formula values

$$n = \frac{30{,}519}{1 + 30{,}519(0.05^2)}$$

n=394.82

By calculating a sample of 395 people, which is a minimum sample, to provide more reliable data, the sample is set to 430 using a specific sample selection (purposive sampling).

In-depth interviews for the key informants are 13 academic executives from TVET educational institutions. Group discussions (Focus Group Discussion) are qualified persons regarding TVET education management and 9 academic administrations.

RESULTS AND DISCUSSION

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From Table 2, the gender of the respondents was male and female. A similar number were 223 females, 51 percent: 207 persons, 48 percent.

Table 2
NUMBER AND PERCENTAGE OF RESPONDENT GENERAL DATA (n= 430)

Personal Factors	Amount	Percent
Sex		
Male	207	48.1
Female	223	51.9
age		
21 – 30 years	84	19.5
31 – 40 years	127	29.5
41 – 50 years	129	30.0
51 – 60 years	84	19.5
61 years and above	6	1.4
Work Experience		
1 – 5 years	111	25.8
6 – 10 years	82	19.1
11 – 20 years	124	28.8
21 years or more	113	26.3
Highest education level		
Bachelor's Degree	270	62.8
master	146	34.0
doctorate	9	2.1
others	5	1.2
Affiliated with The Discipline		
Rail Transport Branch	8	1.9
Macatronics and Robotics Branch	14	3.3
Aircraft Mechanic Branch	4	0.9
Industrial Robots	1	0.2
Logistics	16	3.7
Modern Agriculture, Agriculture	111	25.8
General Disciplines Basics	81	18.8
Other professions (Mechanic, Information, Business, etc.)	195	45.3

The majority of respondents were aged between 41 and 50 years old, 129 of whom were 30 percent. Most respondents have work experience between 11 and 20 years, 124 people, 28 % of whom are 28% of them, 8% of them, and 21% older, 113 persons, 26 percent, 111 people are aged between 1 and 5 years, 25. Affiliated with the Discipline the majority of respondents were affiliated with other professions (information technicians, businesses.) 45% of whom were 45% of them, 3 of whom were affiliated with modern agriculture, agriculture, 111 persons, 25 percent.

Analysis of Learning Skills and Innovation Data of Students

It depicts the perceptions and expectations of teachers towards the learning skills and innovations of the students they teach.

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Data analysis, statistical analysis Mean: Standard Deviation (S.D.) compares the mean between perception/expectations with statistics (Paired Sample t-test) and interprets the mean by setting the criteria for interpreting data results in 5 levels as follows (Boonchom Srisanit, 2013).

The average of 4.51–5.00 means that there is the highest level of expectation/perception.
An average of 3.51–4.50 means that there is a high level of expectation/perception.
An average of 2.51–3.50 means moderate expectations/perceptions.
An average of 1.51–2.50 means that there is a low level of expectation/awareness.
An average of 1.00–1.50 means that there is minimal expectation/awareness.

Table 3
AVERAGE AND STANDARD DEVIATION TEACHERS' PERCEPTIONS AND EXPECTATIONS FOR STUDENTS' LEARNING SKILLS AND INNOVATION IN CRITICAL THINKING SKILLS (N = 430)

Critical thinking skills		Mean	SD	translate	t	Sig.
1. Able to think, analyze, synthesize a reason to solve problems and obstacles in proper unit learning activities.	expect	4.22	0.70	very	9.667	0.000
	perceive	3.84	0.76	very		
2. Able to think about planning activities and answering questions systematically. There is a step-by-step approach.	expect	4.18	0.73	very	8.508	0.000
	perceive	3.85	0.78	very		
3.Skilled at thinking creatively outside the box	expect	4.19	0.74	very	9.533	0.000
	perceive	3.79	0.82	very		
4. To create knowledge, seek knowledge, apply knowledge to prevent problems.	expect	4.20	0.73	very	8.898	0.000
	perceive	3.84	0.75	very		
5.Have decision-making skills under various circumstances	expect	4.22	0.77	very	8.777	0.000
	perceive	3.86	0.78	very		
Overview of critical thinking skills	expect	4.20	0.65	very	10.621	0.000
	perceive	3.84	0.70			

From Table 3, the students' awareness, learning skills, and innovations in critical thinking skills are very high (3.84) considering that there is a high level of awareness in all of them, with the most perceptive averages: *"Having decision-making skills under various circumstances"* (3.86).

The student's expectations, learning skills, and innovations in critical thinking skills overall are very high (4.20) considering each other, there are many expectations in all of them, with the most perceptive averages including being able to think, analyze, synthesize, a reason to solve problems and obstacles faced by proper unit learning activities (4.22) and "have decision-making skills under various circumstances (4.22).

Comparison results from Students' awareness/expectations, learning skills, and innovation in critical thinking skills as a whole. There is a statistically significant difference at the level of 0.05(t=10.621, Sig.=0.000) considering the comparison results. Perception/Expectations on a case-by-case basis showed a statistically significant difference at level 0.

From Table 4, the students' awareness, learning skills and innovations in learning communication skills and innovation overall are very high (3.93) considering each other, there is a high level of awareness in all of them, with the most perceptive averages: "*Having the skills to use communication technology for learning"* (3.97).

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The overall expectations, learning skills, and innovations in communication skills for learning and innovation (4.26) on a case-by-case basis showed that there were many expectations at all levels, with the most perceptive averages including *"opting for and not receiving information for the right reasons"* (4.28).

Comparison results from Students' awareness/expectations, learning skills, and innovation in communication skills for learning and innovation as a whole There is a statistically significant difference at the level of 0.05 (t=10.819, Sig.=0.000)considering the comparison results. Perception/expectations on a case-by-case basis showed a statistically significant difference at level 0.

Table 4
AVERAGE AND STANDARD DEVIATION TEACHERS' AWARENESS AND EXPECTATIONS FOR STUDENTS' LEARNING SKILLS AND INNOVATION, COMMUNICATION SKILLS FOR LEARNING AND INNOVATION (N = 430)

Communication skills for learning and innovation		Mean	SD	translate	t	Sig.
1. Can transfer knowledge, ideas Understanding your proper language	expect	4.24	0.71	very	7.947	0.000
	perceive	3.94	0.73	very		
2. Choose to receive and not receive information for the right reasons.	expect	4.28	0.71	very	9.122	0.000
	perceive	3.94	0.75	very		
3. Be able to speak, write and listen to others speak, as well as ask questions, exchange, learn.	expect	4.26	0.73	very	8.958	0.000
	perceive	3.93	0.79	very		
4. Can negotiate To eliminate and reduce conflicts.	expect	4.25	0.72	very	9.146	0.000
	perceive	3.89	0.82	very		
5. Skilled in using communication technology for learning	expect	4.27	0.72	very	8.507	0.000
	perceive	3.97	0.76	very		
Overview: Communication skills for learning and innovation	expect	4.26	0.63	very	10.819	0.000
	perceive	3.93	0.67	very		

Table 5
AVERAGE AND STANDARD DEVIATION TEACHERS' PERCEPTIONS AND EXPECTATIONS FOR STUDENTS' LEARNING SKILLS AND INNOVATIONS, COOPERATION SKILLS WITH OTHERS (N= 430)

Collaborative skills with others		Mean	SD	translate	t	Sig.
1. Cooperate actively in activities	expect	4.37	0.70	very	8.839	0.000
	perceive	4.06	0.74	very		
2. Share responsibility for teamwork	expect	4.33	0.71	very	9.772	0.000
	perceive	3.98	0.77	very		
3. Value and role of other teammates, work happily with others.	expect	4.30	0.72	very	7.371	0.000
	perceive	4.02	0.78	very		
4. There is an exchange of ideas. Help interdependence	expect	4.29	0.71	very	6.623	0.000
	perceive	4.04	0.79	very		
5. Have the ability to interact with friends User Colleagues and teachers with friendliness	expect	4.36	0.74	very	7.648	0.000
	perceive	4.07	0.77	very		
Overview: Skills in cooperation with others	expect	4.33	0.64	very	9.793	0.000
	perceive	4.03	0.67	very		

From Table 5, the instructors had a significant level of awareness, learning skills, and innovation in cooperation with others (4.03).

The teachers had a high level of expectations, learning skills, and innovation in cooperation with others (4.33) on a case-by-case basis, and found that there were many

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expectations in all of them, with the most perceptive averages: *"Actively collaborating on activities"* (4.37).

Comparison results from students' awareness/expectations, learning skills, and innovation in collaboration with others as a whole There is a statistically significant difference at the level of 0.05 (t=9.793, Sig.=0.000) considering the comparison results. Perception/expectations on a case-by-case basis showed a statistically significant difference at level 0.

Table 6
AVERAGE AND STANDARD DEVIATION TEACHERS' AWARENESS AND EXPECTATIONS FOR STUDENTS' LEARNING SKILLS AND INNOVATION IN CREATIVITY AND INNOVATION (N = 430)

Creative and innovative skills		Mean	SD	translate	t	Sig.
1. Have the skills to create new knowledge that has never been before.	expect	4.16	0.75	very	8.881	0.000
	perceive	3.81	0.78	very		
2. Have the skills to build the same knowledge into new knowledge.	expect	4.20	0.72	very	9.508	0.000
	perceive	3.84	0.76	very		
3. Skilled in developing new knowledge from criticism	expect	4.16	0.76	very	9.758	0.000
	perceive	3.78	0.78	very		
4. Mistakes can be used as learning opportunities	expect	4.21	0.75	very	8.123	0.000
	perceive	3.91	0.77	very		
5. Knowledge can be applied to create useful innovations.	expect	4.19	0.78	very	9.046	0.000
	perceive	3.84	0.79	very		
Overview Creative Skills And innovation.	expect	4.18	0.68	very	10.863	0.000
	perceive	3.83	0.69	very		

From Table 6, the instructors were perceived, learning skills and innovations of students in creative and innovative, overall at a very high level (3.83) considering each other, there was a high level of awareness in all of them, with the most perceptive averages being *"mistakes can be used as learning opportunities"* (3.91).

The overall expectations, learning skills, and innovations of students in creativity and innovation (4.18) on a case-by-case basis showed that there were many expectations in all of them, with the most perceptive averages, including *"mistakes can be used as learning opportunities"* (4.21).

Comparison results from Students' awareness/expectations, learning skills, and innovation in creativity and innovation as a whole. There is a statistically significant difference at the level of 0.05 (t=10.863, Sig.=0.000)considering the comparison results. Perception/expectations on a case-by-case basis showed a statistically significant difference at level 0.

Summary of Qualitative Data Analysis Results with In-Depth Interviews

TVET arrangement conditions and obstacles consist of 5 sub-issues. The need for people of the local labor market has been found to need digital industry personnel focused on creating artificial intelligence and mechatronics focused on programming. Robot Control Creating Automation 2) Medical and Biological Health Industry, Chemistry, Medicine 3) Food industry, Food for the future, Agriculture and Biotechnology, SMART FARM 4) Modern Automotive Industry, Computer Engineering, Electronic Engineering, Electrical Engineering, Digital Development, Focused on Artificial Intelligence, Mechatronics, Programming Focused Robot Control Creating automation, 5) Aviation and logistics industry, and 6) other fields such as

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motor mechanics, power electricians, factory mechanics Electronics Technician Computer Technician Mechanical Writer.

Barriers to producing a workforce in line with the labor market include 1) curriculum problems. The curriculum fails to develop learners in time for the characteristics and skills that the labor market needs. The course is not designed for the next 4 or 5 years. Learner problems Students do not understand the course before entering, not pursuing career goals or future needs. Instructor issues Instructors have not yet developed themselves to have the skills that the labor market needs. Lack of training development in new technologies and management problems, lack of funding. Not enough tools, equipment, and systematic coordination of integrated work between one and outside agencies.

The problem of opening courses in disciplines linked to growth engine and S–curve, New S–curve, such as the intelligent electronics industry, is that learners and instructors do not understand what professions they will pursue in the curriculum.

Local establishments are mainly internships/professional experience interns, group companies in industrial estates. Software Industry Group Aviation Industry Group Leading communications equipment, industry, and many significant private companies cooperate in research, training, and cooperative work.

Cooperation with foreign networks in the form of training for personnel, internships, professional experience training for students, but some obstacles include: The problem is for students who do not wish to intern abroad. It's challenging and procedural. Problems, the determination of responsible persons, and the cost of sending personnel abroad are pretty high.

Guidelines for applying technology and innovation to learning Transfer of knowledge to encourage learners

Developing existing skills (Reskill) to enhance new skills (Upskill) using technology to enable learners to learn for themselves. The focus must focus on transferring performance and experience according to the performance of the curriculum and ensuring the learner's knowledge, skills, and experience. The expertise or excellence in the skills of each field must be focused. Focus on mixed learning, as some fields may not be able to self–learn because they require practice.

Promoting TVET is part of lifelong learning. It can happen by creating a mechanism of professional support. Students, interested parties, come in and learn to gain skills and keep them as Craigits. Lead to lifelong learning mechanisms learning can be in the on-the-job training format.

They were applying technology and innovation to learning, knowledge transfer, and encouraging students to learn on their own throughout their lives continuously by promoting the use of innovation and technology in both learning management processes. Transfer of instructor knowledge and student research Creating Knowledge Module Sets Online teaching is available. MOOCs and credit banks

The adoption of technology and innovation in the development of mass communication, Information technology, and telecommunications Learners can learn on their own and learn throughout their lives: online lessons, centers, abscesses, professional performance. Use AR VR in teaching and learning it must prepare infrastructure, networks, equipment.

Model of TVET Management in the Disruptive Technology Era

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Based on document analysis, quantitative analysis, and qualitative analysis, It is concluded that in the disruptive technology era, digital transformation has been caused. It is leading to changes in skills needed for work and life. TVET institutions must make the most of integration, combining new technologies to prepare learners for the world of work today and in the future. By managing TVET to be ready for change under disruption, executives can adopt Buddhist principles as the basis of holistic organizational management. If the organization has the knowledge and, in conjunction with promoting morality for its members, it will lead to sustainable changes in society and the environment and elevate it to digital organizations.

There are many among the educational management concepts and theories that are widely taught in the academic sphere. One of the methods used to analyze the management of Thai education in the 21 century is the System Theory, an analytical method that focuses on the management system at all stages, including focusing on input, processes, output, and impact.

In research on the TVET management model in the Disruptive Technology era, to guide the agencies involved in the development of Thai people in the 4.0 era to produce graduates to the labor market and train to increase skills for workers in the labor market. By managing technical and vocational education and training (TVET) in the Disruptive Technology era, researchers analyze and formulate the following system theory (Figure 2):

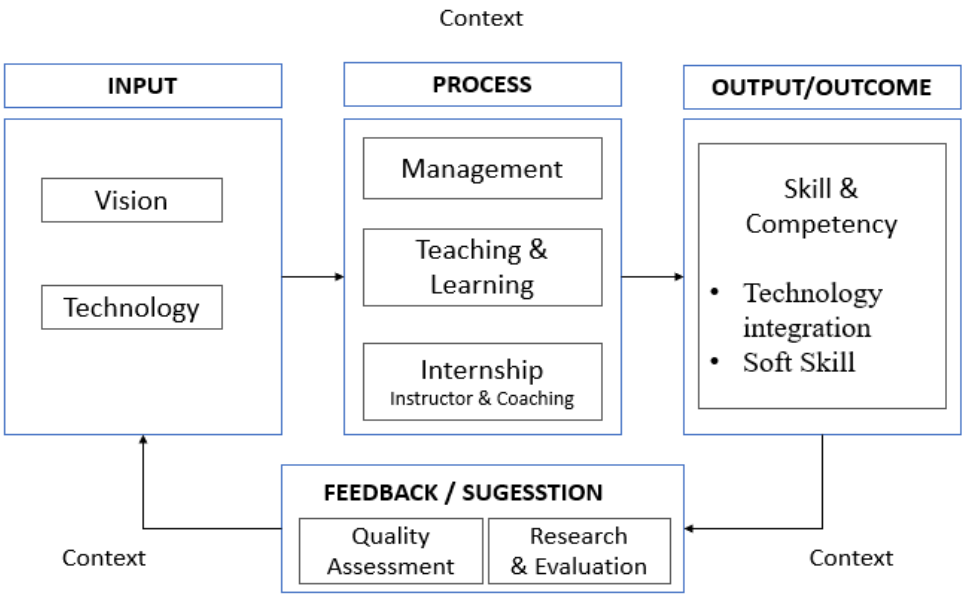

FIGURE 2
DEVELOPMENT OF THE BUDDHIST TVET MANAGEMENT MODEL
In the Disruptive Technology era

Context

In the disruptive technology era, there is a radical and rapid change, even as *"education sectors"* worldwide adapt, incorporating *"digital technology"* into teaching and exams.
It is expected that until 2020, the core skills that exist today will be lost as they can no longer be used. In addition to that, such skills will create a new type of work that requires different skills

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than those currently available. Changes to the working patterns will continue to occur faster. Such changes are particularly challenging for vocational education. That prepares graduates to enter rapidly changing employment. You need to prepare for the challenge as the working pattern changes very quickly. What students learn in school may therefore be obsolete. Upon graduation, entering the field of work, students should be able to change what they learn in school in the face of a new work model.

TVET has to accelerate the education system to keep pace with the changing era and seize it like educational institutions. "Learner performance" is primarily open to all people who have access to education, both systematically and informally, to be able to learn throughout their lifelong learning.

Inputs

It consists of two activities: 1) TVET vision and 2) Technology that drives innovation in TVET. TVEV is a technical and vocational education and training institution. Curriculum and teaching are managed to develop students' quality following vocational education standards in the Thai academic era 4.0, enhancing labor by applying technology and innovation in the learning process. Learners can learn on their own and learn to innovate, create added value, and conform to changes in the digital world in the disruptive technology era.

The five technologies that drive innovation in TVET are the following technologies used to drive innovation in TVET: Ubiquitous computing is a conceptual technology that wants to connect networks with existing technologies to be accessed anytime, anywhere. Collaboration technologies, collaborative technology, enable efficient coordination. Reduce distance barriers. Extended reality technologies, a new technology that combines VR AR and MR, create a virtual world without limits. Artificial intelligence it’s like a brain inserted into various technologies and innovations. Blockchain is a technology that brings safety, reliability without intermediaries.

CONCLUSIONS AND RECOMMENDATIONS

Processes

Consists of 3 activities: 1) Buddhist management, 2) teaching, and 3) internships. Management: This is an administration in which executives apply Buddhist principles to self-administration, Human management and work administrative.

Teaching & Learning

Principles of teaching and learning 1) Instructors are centered, coaches, counselors, enhancing knowledge, creating thinkers, 2) learners Create ideas Self-learning, self-reliance 3) Activities focus on how to think, collaborate Innovate and 4) Media/Content, open educational resources, and self-developed innovative materials.

Develop teaching and learning using potential digital technology In many ways, including Online classrooms that will improve the quality of the learner's education. Mobility keeps teaching from sticking to location and time. Learners can learn from anywhere, anytime. Instructors can teach from anywhere. Online learning via the web allows students to review lessons as often as they want. Analytics enables online teaching administrators to analyze students all the way around and use the information they have to improve the quality of online

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lessons. Social media for learners and instructors create collaborations. Engage and encourage more mutual discussion. Mixed learning The introduction of digital technology to help in the education sector enables a wide range of teaching materials and can improve existing knowledge. Internships: Internships are the organization of learning processes to practice skills. Thought processes, coping management the situation and application of knowledge to prevent and solve problems are organized in cooperation between the school, the manufacturing, and the service sectors.

It should be open to parties to participate in vocational education management. Collaborate between public and private schools, including establishments. Cooperation between schools and institutions must be promoted in the development of a bilateral system. The cooperative education system and more training in factories and establishments' Deterrent rules and regulations should be repealed. To attachment the private sector to vocational education management. Instructor skills must not be the sole instructor. But the instructor must learn with the learner. Improve teaching style changes curriculum, methods, teaching techniques, or innovative teaching that will improve teaching and learning to keep pace with the rapidly changing disruptive technology era. Instructors work hard to develop students and accelerate the learner's digital transformation skills to support future occupations.

Outputs/outcomes: Skills and Competency

Technology integration: Skills are the ability to combine digital technologies for efficient work or innovation. Invest less but highly beneficially, which is the basic skills needed to integrate technology. Digital literacy means skills in using digital technology in four areas: understanding digital technology. Access to digital technology the use of digital technology and innovation using digital technology. Digital marketing or marketing Use eye-reducing principles while bringing in digital technologies to help with marketing. Data analysis for new knowledge or ideas that lead to innovation. DevOps Philosophical Combination Culture, beliefs for improving and developing innovation to meet the target audience's needs. Mobility management and data to increase productivity. Machine learning is the functioning of technology that can be learned like the human brain AI (Artificial Intelligence).

Soft Skills: Essential to have Digital Transformation Skills

Critical thinking is to define a problem. Finding solutions with new methods or innovative solutions can create your ideas. Data analysis, data synthesis, and conclusion creation Complex communication is the effective communication of knowledge, ideas, or complex communications. Encourage high efficiency in teamwork. Creativity is the ability to recognize problems and solve problems creatively (Creative Problem Solving) and face challenges. Collaboration is the will to work with other people. Have listening skills, creative communication, back-to-back information, and learning exchanges. Flexibility and adaptability are modifying goals and methods, plans to conform to situations, and embracing new goals or new ways of working, not sticking to the same things.

Productivity and Accountability: A steadfast commitment to achieving the goals of productivity and a sense of responsibility for the work done. This is the final step of the feedback/improvement format, reflecting TVET's digital transformation drive using internal

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quality assessments and research principles to integrate into the study to find solutions to improve development.

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