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Evaluating model teacher education and training at Vietnam's universities of technology and education

Chinh Danh Cao[1]
Hang Thi Thuy Vu[2]✉
Tuan Van Nguyen[3]
Hung Thanh Nguyen[4]
Thanh Thi Nguyen[5]


(✉ Corresponding Author)

[1]*Vinh University of Technology Education, Nghe An Province, Vietnam.*
Email: caochinhktv@gmail.com
[2]*University of Education, Vietnam National University Hanoi, Hanoi, Vietnam.*
Email: vuthithuyhangvnu@gmail.com
[3]*Ha Noi Metropolitan University, Hanoi, Vietnam.*
Email: tuannv@daihocthudo.edu.vn
[4]*University of Education, Hue University, Thua Thien Hue Province, Vietnam.*
Email: nthungsp@hueuni.edu.vn
[5]*Hong Duc University, Thanh Hoa Province, Vietnam.*
Email: nguyenthithanhtlh@gmail.com

Abstract

The traditional educational paradigm has become outdated as a result of changes in both the cultural and socioeconomic setting. A more sustainable and acceptable teacher is needed in education. A quantitative study was conducted. 95 administrators and teachers at the University of Technology and Education participated in this study with the aim of analyzing the current status of the teacher education model at the institution. According to the findings of the study, the model for educator preparation has been put into practice primarily through the processes of planning, organizing and directing activities related to educator preparation as well as inspecting and assessing the quality of education. The outcomes of the study indicate that it is essential to design educational programs that are appropriate for the present context. In particular, the study suggests that one of the most important steps towards achieving success is to incorporate technology into teaching methods. The process of educating teachers with the right degree of expertise and skills should be emphasized by educators and policymakers by developing relationships with other educational institutions and allowing teachers to participate in internships.

Keywords: Evaluation, Organization, Teacher education model, Teacher education.

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Contents

Contribution of this paper to the literature

This research contributes to our understanding of the model of teacher education at Vietnam's University of Technology and Education. This study revealed the necessity for educators to implement a model for teaching education that has been implemented primarily by planning, organizing and directing teacher education activities as well as inspecting and assessing the quality of education.

1. Introduction

The quality and evaluation of education are constantly changing in society. Schultz and Schultz (1982) claimed that investments in knowledge primarily determine the future of people. Individual and national growth are increasingly dependent on education with teachers playing a crucial role in student learning. The success or failure of an educational system depends on the quality of the education system and teacher preparation programs. Teacher transformation is the key to improve the education system (Hallinan & Khmelkov, 2001). Similarly, Lassa (2000) stated that the significance of teachers and their role in the educational process are fundamental to education. Teachers must maintain order, offer students important information and be capable of facilitating and providing a range of complicated learning materials. In fact, educating teachers to meet these standards is a continuing and complicated challenge. Education policymakers have prioritized teacher education programs intending to effect reform. While considering educational reform initiatives, It is essential to help teachers stay well-informed of current teaching trends (Steadman, 2008) and provide them with the qualifications and abilities necessary to impart skills and information to students (Supriatna, 2011). In addition, Schwille, Dembélé, and Schubert (2007) suggested that teacher training should be based on the requirement for a strong, effective development of teachers' knowledge, abilities and general attitudes. Reform efforts were guided by a different theoretical framework and philosophical position and involved careful alignment between curriculum and practical application as well as enhanced collaboration with local schools. Information and communication technology can improve teachers' education and professional development by providing them with possibilities to generate new ideas through their training programs.

According to Fafunwa (1974), the key to educational progress is continuing teacher education since the country can only increase its educational base with adequately trained teaching staff. Moreover, Musset (2010) emphasized that teacher education fundamentally affects both teacher and student outcomes. Training implies that quality teaching is comparable to successfully implementing desired mechanical activities. The primary purpose of education is to facilitate the development of essential information, skills and attitudes by people and communities (Feiman-Nemser, 2001). According to Nakpodia and Urien (2011),teacher education is the process of developing prospective teachers, upgrading teachers' knowledge and abilities and overcoming challenges through continual professional development. In the teacher education program, new teachers must acquire knowledge, abilities and values to improve their abilities. In addition, to gain particular practical knowledge, pedagogical skills and technical abilities, the educational system must incorporate teachers' assessments. The education of teachers is seen as an apprenticeship, preferably in the workplace (Mcnamara, Murray, Florian, & Pantić, 2013). According to Stephens, Egil tønnessen, and Kyriacou (2004), teacher education is a training that introduces new teachers to the practical skills and preparation required to: instruct, manage classroom activities, provide assignments to reinforce and expand and ensure a secure learning environment for students. If teachers improve their skills and knowledge, they will prepare the most effective curriculum and instructional design (Vrasidas & Zembylas, 2004).

According to Sahlberg (2011), global education reform movements have facilitated the implementation of educational standardization and enhanced corporate management. According to Putnam and Borko (2000), teacher education should be appropriate for the new learning perspective. Teacher education should enhance teaching quality. A consultant in a teacher training school should be responsible for educational training, teaching and supervision. Theisen and Adams (1990) categorized the content of comparative education research into four categories: description, analysis, evaluation and exploration. Expectations and assessments of teacher education are based on factors other than their teacher training techniques such as curriculum development and research output (Korthagen & Lunenberg, 2004). Transformations have frequently focused on enhancing the relationship between university courses and school activities (Grossman, Hammerness, & McDonald, 2009). In addition, reform requires new roles and teaching methods that translate into long-term development processes, forcing them to focus on changing their practices. Current teacher education programs include teacher orientation conferences, seminars, symposiums, courses, print publications, teacher consultations, awards for school-based education, research seminars and training. Darling-Hammond (2012) identified several complementary components of a teacher training program including a shared vision, identification of training in all courses, practical experience, rigorous required courses in a clinical context and closely supervised field experience (at least 30 weeks).

In Turkey, teacher education comprises four-year bachelor's degree programs in educational colleges as well as the completion of certificate courses and optional courses (Baskan, Aydın, & Madden, 2006). All existing teacher training programs in Nigeria have three main components (Afemikhe, 2004) including the foundation of education; pedagogical courses and teaching general subjects such as science, arts and social sciences. According to Cortina and Thames (2013), the teacher education model in Germany or other European or American nations consists of two phases: (i) theory-focused higher education and specific specialized knowledge and (ii) school-based training that gathers structured and supervised practical experience with an emphasis on classroom management skills and pedagogical knowledge. At the primary and middle school levels certificates have few course requirements. Each educational faculty in Finland includes a practical school at the elementary and secondary levels (Ekinci & Öter, 2010). Hayhoe (2002) proposed four models for the development of contemporary teacher education. Colleges merging into independent university-level institutions and cooperating with universities in the training of primary and secondary school teachers while maintaining their legal standing. Moreover, Van Dijk and Kattmann (2007) showed a model of "restructuring education for teacher education" was created to examine (i) teachers' knowledge and beliefs about students; (ii) teachers' knowledge and beliefs about manifestations of the subject and (iii) teachers' knowledge of the subject matter for teaching related to the design of the teaching-learning sequence.

In Vietnam, researchers have also explored issues associated with teacher education. Hamano (2008) investigated the challenges experienced by teachers in Vietnam. According to Kieu, Singer, and Gannon (2016), education for sustainable development-related topics has been integrated into the curriculum. Similarly, Van Hong, Tuyen, and Thi Luong (2018) recommended that high-quality teacher training include technological competences, teaching method competencies and technology application capabilities in teaching. The purpose of this study is to evaluate the model of teacher education based on the aspects of planning, organizing and directing teacher training activities, as well as inspecting and evaluating the quality of teacher.

2. Method

2.1. Participant and Procedure

The sample was recruited from five Vietnamese universities. 95 participants have participated in the survey. The participants consist of two different groups: 35 administrators and 60 teachers from the universities of technology and education as shown in Table 1.

Table 1. Participants' characteristics.

Universities	N	%	n	%
Ho Chi Minh city university of technology and education	8	22.86	15	25.00
Hung Yen University of technology and education	7	20.00	13	21.67
Gia Dinh University of technology and education	6	17.14	10	16.67
Vinh Long University of technology education	6	17.14	10	16.67
Vinh University of technology education	8	22.86	12	20.00
Total	35	100%	60	100%

The investigation was conducted using a quantitative methodology. Before taking the survey, participants were required to provide informed consent and were guaranteed that their responses would remain anonymous and confidential to researchers. The authors will provide information as well as instructions on how to complete the survey. The participants will next begin self-reporting demographic information such as gender, university attended etc. Participants will fill out the survey. During implementation, the author group will respond to any queries from volunteers. It takes approximately 10 to 15 minutes to complete the survey.

2.2. Measurement

The study was designed to evaluate the components of the university, technical and education model for teacher education. The survey is divided into the following five major sections:

Table 2. Administrators and teachers at universities of technology and education evaluate the planning activities for teacher education.

Items	Level (%)								Mean
	Excellent		Above average		Average		Very poor		
	N	%	N	%	N	%	N	%	
Analyze the current state of teacher education for purposes of planning (Human, material, financial)	25	26.3	28	29.5	26	27.4	17	17.9	2.6
Determine the necessary human resources	26	27.4	31	32.6	21	22.1	17	17.9	2.7
Establish objectives and a timeline for completing the course.	19	20	21	22.1	26	27.4	29	30.5	2.3
Develop a detailed plan for the training course.	19	20	28	29.5	29	30.5	19	20	2.5
Identify implementation strategies for the training plan	20	21.1	18	18.9	16	16.8	42	44.2	2.2
Making supplementary training plans (Establishing budgets and time)	22	23.2	35	36.8	21	22.1	17	17.9	2.6

The first section consisted of questions on the evaluation of teacher education planning activities. The Likert 4 scale with a range of 1 to 4 was used (1 = very poor, 2 = average, 3 = above average and 4 = excellent). The second section contained questions about the implementation of organization teacher education activities, the Likert 4 scale with a range of 1 to 4 (from very poor to excellent) was used. The third section includes Likert-scale questions about the implementation of directing teacher training activities ranging from very poor to excellent. In the fourth section, the implementation of the inspection of teacher training activities is rated on a scale of 1 to 4. Finally, there are questions concerning the quality of evaluation and training by managers and supervisors. Teachers are scored on a scale of 1 to 5 (1 = very poor, 2 = below average, 3 = average, 4 = above average, and 5 = excellent).

3. Result

Administrators and teachers evaluated the implementation of teacher training plans at the University of Technology and Education in Table 2. The findings showed that with an average score of 2.7, the content about " determine necessary human resources" was the most effective.

Next was " analyze the current state of teacher education for planning purposes (human, material and financial)" and " *making supplementary training plans (establishing budgets and time)*" with an average score of 2.6; " *develop a detailed training course plan*" was evaluated with a mean score of 2.5. On the other hand, administrators and teachers rated the content of " *identify implementation strategies for the training plan*" as the lowest, with an average score of 2.2 followed by " *establish objectives and a timeline for completing the course*" with a mean of 2.3.

Table 3. Evaluation of organizing activities for teacher education.

Items	Level (%)								Mean
	Excellent		Above average		Average		Very poor		
	N	%	N	%	N	%	N	%	
Determine the school departments that participate in teacher education (Direct departments, indirect departments)	21	22.1	21	22.1	36	37.9	17	17.9	2.5
Define the responsibilities of each department and assign work accordingly.	16	16.8	22	23.2	20	21.1	37	38.9	2.2
Establish a structure for departmental coordination of teacher education	47	49.5	19	20	21	22.1	7	7.4	3.1
Monitor, evaluate and modify the implementation of the teacher education plan.	46	48.4	24	25.3	18	18.9	7	7.4	3.1

The evaluations of administrators and teachers about the organization of teacher education activities at the University of Technology and Education are shown in Table 3. The results showed that the items " *establish a structure for departmental coordination of teacher education*" and " *monitor, evaluate and modify the implementation of the teacher education plan*" were rated highest with a mean score of 3.1 followed by " determine school departments that participate in teacher education (direct departments, indirect departments)" with a mean score of 2.5. Finally, " *define the roles of each department and allocate work appropriately*" was evaluated the lowest for the substance of implementing educational programs, with an average score of 2.2.

Table 4. Evaluation of the direction's implementation in teacher education activities.

Items	Level (%)								Mean
	Excellent		Above average		Average		Very poor		
	N	%	N	%	N	%	N	%	
Determining the prioritized list of tasks related to teacher education.	45	47.5	26	27.5	15	15.5	9	9.5	3.1
Advise the board of directors on teacher education decisions	37	38.5	11	11.5	19	20	26	27.5	2.6
Organizing and implementing decisions about teacher education	28	29.5	26	27.4	18	18.9	23	24.2	2.6
Providing circumstances for teacher education	52	54.7	18	18.9	15	15.8	10	10.5	3.2
Implement supporting policies and procedures for teacher education at academic institutions.	19	20	26	27.5	21	22.5	29	30	2.4

Table 4 showed the evaluation of teachers and administrators about the implementation of activities guiding teacher training. " *providing circumstances for teacher education"* was rated the highest content by administrators and teachers showed an average score of 3.2. The question *" determining the prioritized list of tasks related to teacher education"* was given a mean score of 3.1 indicating an above-average understanding level. The average score for directing teacher training activities including *" advise the board of directors on teacher education decisions"* and *" organizing and implementing decisions about teacher education"* is 2.6. With an average score of 2.4, the item " *implement supporting policies and procedures for teacher education at academic institutions"* was scored the lowest.

Table 5. Evaluation of the teacher education inspection activities.

Items	Level (%)								Mean
	Excellent		Above average		Average		Very poor		
	N	%	N	%	N	%	N	%	
Determine and grasp the evaluation criteria for the quality of teacher education.	29	30.5	23.2		26	27.4	18	8.9	2.7
Organize the assessment and inspection of teacher training activities	19	20	28	29.5	29	30.5	19	20	2.5
Summary of learnings from teacher education activities	14	15	31	33	21	23	29	31	2.3
Adjusting the essential implementation challenges for the teacher education plan	22	23	23	24	26	27	24	25	2.4

Table 5 demonstrates the level of inspection of teacher education activities with a mean score of 2.7 on the item *" determine and grasp the evaluation criteria for the quality of teacher education"* is rated as the most effective activity. *"Organize the assessment and inspection of teacher training activities"* has an average score of 2.5 and *" adjusting the important implementation problems for the teacher education plan"* has a mean of 2.4. In addition, the *" summary of learning from teacher education activities"* of teacher education examination activities was evaluated the lowest by administrators and teachers with an average score of 2.3.

The opinions of administrators and teachers about implementing teacher education quality evaluations at the University of Technology and Education are shown in Table 6. The results suggest that the two highest-rated items in the teacher training quality evaluation are " *evaluate the academic achievement of vocational students*" and *" preparing to teach"* with an average score of 3.67. The mean score for *" professional competence (mathematics, electronics, informatics, manufacturing mechanics, dynamic mechanics)*" is 3.50, " *health status*" is 3.40 and *" participate in social activities"* is 3.25. The elements of *" moral qualities"*, *" coordinating teamwork"* and *" administration and education of vocational students"* are assessed at an average of 3.17. In contrast, some other items were rated lower by administrators and instructors with the average score for " management of vocational training tools and equipment" being 2.92, *" scientific research"* received an average score of 2.85; *" career counseling and guidance for*

students" had an average score of 2.84 and *" self-study and independent research for professional growth"* with a mean score of 2.74.

Table 6. Evaluation of education quality at the university of technology and education by administrators and teachers.

Items	Level (%)					Mean
	Very Poor	Below average	Average	Above average	Excellent	
Developing vocational training programs	0	8.5	43.4	32.9	15.2	3.55
Preparation for teaching	0	6.8	39.5	33.5	20.2	3.67
Teaching in class	0.8	5.2	54.4	38.6	0.8	3.33
Evaluate the academic achievement of vocational students	0	0	45.5	42.3	12.2	3.67
Scientific assessment	0	41.0	32.4	19.2	7.4	2.93
Administration and education of vocational students	1.6	18.5	46.3	27.7	5.8	3.17
Management of vocational training tools and equipment	3.4	23	51.9	21.7	0	2.92
Coordinating team work	0	23.0	41.7	31.0	4.3	3.17
Conflict management and pedagogical situation resolution	1.7	22.9	55.2	20.2	0	2.94
Pedagogical communication	0.9	17.7	53	27.6	0.8	3.10
Professional ability (Mathematics, electronics, informatics, manufacturing mechanics, dynamic mechanics)	0.9	3.7	40.8	54.9	0	3.50
Scientific research	4.1	21.9	43.1	16.4	8.5	2.85
Access to cutting-edge technologies	2.5	20.2	56.9	21.4	0	2.99
Self-study and independent research for professional growth	4.3	32.4	49.1	14.3	0	2.74
Utilization of IT in education, scientific research and training administration	3.6	22.4	49.2	25	0	2.96
Use a foreign tongue	4.9	22.9	45.4	26.8	0	2.94
Participate in specialist organizations	1.7	17.8	64.4	16.1	0	2.95
Participate in social activities	0.9	12.6	51.1	32.1	3.4	3.25
Career counseling and guidance for students	0	39	34.7	20.0	4.3	2.84
Professional manner	3.5	16.5	60.8	19.3	0	2.96
Moral traits	2.6	7.8	50	37.1	0	3.17
Health status	0	10.3	38.5	50.4	0.8	3.40

4. Discussion

Technological modernization has led to new challenges for the development and practice of several careers. Developing a sustainable model of teacher education and professional growth for teachers within the school system is crucial. The study's primary objective was to examine the present situation of teacher education models at the University of Technology and Education through procedures such as planning training, organizing training activities, directing training activities, testing and evaluating training quality. The study results indicated that the teacher education model had been implemented based on the evaluations of teachers and administrators.

This study reveals that administrators and teachers evaluate the planning activities for teacher education. Research by Martínez and Mauricio (2022) indicates that in the training process, an active work plan with the participation of teachers must be implemented. Plans for teacher education will assist in evaluating the efficacy of the action taken. Similarly, Paz-Penagos, Pedraza-Vega, and Pimienta-Giraldo (2022) Penagos's study have established a preliminary plan for teacher training that will enable teachers to build appropriate strategies and procedures to achieve the intended learning outcomes. Hence, the training plan must be substantial and continue to enhance teaching practice and foster an appropriate professional culture. In addition, Liston and Zeichner (1990) indicated that strategies should include improving education in all curriculum phases, teaching implementation and evaluation. School administrators frequently require lesson plans for evaluation purposes (Halverson, Kelley, & Kimball, 2004) and to monitor classroom curriculum (Fleck, 2013).

Vaseyskaya and Glukhov (2018) argued that universities must modify the teacher education model in response to the growth of the digital economy. Education must specify the responsibilities and abilities of teachers, develop the required training, organize and support student engagement in online learning (Muñoz, González Sanmamed, & Hernández Sellés, 2013). In addition, the education system should supply and organize professional development courses for teachers. The implementation and planning of the organization of new courses and teaching techniques will ensure their suitability in terms of course objectives, materials, teaching resources and assessment tasks. For the organization of teacher education to be effective, the activity of directing the execution of teacher education is a crucial factor in which the role of the leader must be considered. Moeini (2008) suggests that leader must have specialized knowledge and vision to effectively develop and direct the plan.

Furthermore, the study results provide teacher and administrator evaluations for the inspection and evaluation of teacher education quality. The quality of a training model must be checked and evaluated after implementation. Three essential components of training programs include cohesion and close integration between courses and between courses and internships in schools, rigorous supervision of the integration of internships and courses and diverse relationships with schools to develop an effective teacher education model (Darling-Hammond, 2006). The quality of monitoring and evaluation within the same university frequently differs (Simpson, 2006). The quantitative management policy mechanism has changed to the evaluation of teachers due to the close relationship between student results and teacher quality (Ozga, Simola, Varjo, Segerholm, & Pitkänen, 2011). In addition, using

information technology in teacher education is crucial for monitoring and evaluating the whole planning and professional development process (Moeini, 2008).

4.1. Implication

This study has theoretical and practical implications. Future researchers can use the study's findings as a guide and a resource. Research indicates that students become active teachers by establishing effective connections between university courses and practice. Educators should carefully design the teacher's learning process and provide specialized pedagogy while investing in the quality of the staff (Korthagen, Loughran, & Russell, 2006). Institutions of higher education must establish programs that assist potential teachers in gaining a greater grasp of various academic, social and cultural settings and acquiring essential skills and knowledge. A stronger relationship model with other schools is necessary to encourage mutual transformation in teaching. The education system must provide an appropriate learning experience to prepare future teachers of outstanding quality. In addition, the study's findings propose using information technology in the teacher education process. The effective integration of information technology also contributes to improve the teaching and learning processes in all fields of education.

4.2. Limitations and Future Research

There are several limitations to this study. First, this is a quantitative cross-sectional study. Further studies should evaluate the efficacy of the educational model and incorporate additional research approaches such as empirical and qualitative research. Second, the sample does not represent the Vietnamese population as a whole. Therefore, future researchers should study more diverse and numerous groups of research participants. This study only assesses the training model based on the opinions of administrators and professors. It is feasible to survey more students about the program. Lastly, this study examines the reality of the teacher education model's elements without analyzing the variables influencing the model or the model's causal relationships so that future research can benefit from it.

5. Conclusion

Education and many other disciplines face various difficulties. The traditional model of teacher education is no longer appropriate for the current environment which demands sustainable and relevant models emphasizing professional skills and knowledge development. The study investigated the current status of the University of Technology and Education teacher education model. According to the findings of the study, the universities of technology and education performed planning and organizing activities for teacher education provided direction for implementation in teacher education activities and evaluated the quality of education. The study proposed that educators and policymakers must construct culturally and socially appropriate teacher training programs and integrate information technology into the educational system.

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