

Hanoi, July 13, 2026

ABSTRACT OF THE THESIS

1. THESIS SUMMARY

Candidate's full name: Luong Minh Tan

Cohort 7 (2022 - 2025) - Specialization in Theory and Methods of Music Teaching.

Code: 9140111

Topic: *Application of Information Technology in Teaching Music Education Students at the National University of Arts Education*

Scientific supervisor: Assoc. Prof. Dr. Nguyen Thi To Mai

Training institution: National University of Arts Education

2. ABSTRACT OF THE THESIS

2.1. Research Objectives and Tasks

2.1.1. Research Objectives

Based on theoretical and practical research, this dissertation proposes several measures for applying information technology in teaching for students majoring in pedagogy . Music education at the National University of Arts Education aims to develop the capacity to apply digital technology in the context of the digital transformation of Industry 4.0, contributing to improving teaching effectiveness and meeting the learning outcomes of the training program.

2.1.2. Research Objectives

The thesis accomplishes the following main tasks:

- An overview of research studies related to the dissertation topic and the development of a theoretical framework for the application of information technology in teaching music education students.

- Survey, analyze, and evaluate the current state of IT application in teaching for Music Education students at the National University of Arts Education.

- Further investigate the current state of IT application in teaching among

secondary school music teachers.

- Propose several measures for applying information technology in teaching music education students at the National University of Arts Education. Conduct pedagogical experiments and build a music education database to verify the feasibility and effectiveness of the proposed measures. Conduct pedagogical experiments and build a music education database to verify the feasibility and effectiveness of the proposed measures.

2.2 . Research Methodology

2.2.1. Theoretical research methods

- *Analytical method*: Used to analyze relevant documents: analyzing the basic concepts of the topic; the role of IT applications in teaching Music Education; analyzing the characteristics of software; the current situation and measures for applying IT in teaching and learning Music Education at the National University of Arts Education.

- *Synthesis method*: The synthesis method is used to systematize the issues being analyzed, systematize theoretical research materials; synthesize information on several application software, databases, and digital music; and synthesize issues collected during the investigation of the current state of music teaching and other related issues. From this, conclusions and proposals are made regarding application methods for specific music teaching processes.

- *Comparative method*

This method is used to compare software within the same functional group and to compare experimental results. In addition, the effectiveness of proposed solutions should also be compared.

- *Method of concretization*: Use the method of concretization. To analyze in detail the conceptual issues, the current state of IT application, and measures for applying IT in teaching with specific examples.

- *Generalization method*: Using the generalization method To summarize the concepts and theoretical research issues, such as the role of IT applications in teaching music education students, to generalize them into core issues, prominent aspects in the current state of IT application, and key contents in the measures for applying IT in teaching music education students.

2.2.2. Practical research methods

- *Pedagogical observation method* : Observing the application of information technology in the teaching activities of teachers and the learning activities of students in the Music Education major to understand the current situation.

- *Research and survey methods* : Using research and survey methods to collect information on the level and ability of current music lecturers to apply information technology; surveying the current state of information technology application at the National University of Arts Education and the application of information technology in teaching by general education teachers.

- *Interview method*: Used to exchange ideas with teachers, students, and administrators to understand their opinions and perspectives on the application of information technology in teaching activities for teachers and learning activities for students in the Music Education major.

- *Expert method*: The doctoral candidate used the expert method to seek advice from scientists experienced in applying information technology. Specifically, in this dissertation, the candidate sought expert advice from Associate Professor Dr. Le Nhat Thang, Head of the Graduate School of the Posts and Telecommunications Institute, who has extensive experience in teaching and research on digital resources and Industry 4.0 in higher education in Vietnam.

- *Methods for summarizing pedagogical experience*:

This method is used to study issues that summarize the experiences of educators and scientists in the field of digital technology, in the field of teaching IT, etc.; the experience of applying IT by teachers directly teaching Music Education; and the experience of the doctoral candidate in teaching and applying IT in their professional practice.

- *Product-based research method*: This method is used to study the process of applying information technology in teaching for music education teachers and students at the National University of Arts Education through products such as lesson design and digital resource exploitation.

- *Pedagogical experimental method*

This method is used to verify the scientific validity and feasibility of the proposals in the thesis. Through experimentation, the effectiveness of the proposed solutions can be determined for application in the undergraduate Music Education program .

2.2.3. Support Methods Group

- *Mathematical statistical methods*: NCS uses mathematical statistical methods. To process the results after surveying the current situation and conducting experiments.

- *Interdisciplinary approach*: NCS emphasizes interdisciplinary research methods to approach the problem from the perspective of engineering, technology, and informatics, combined with musicology and music pedagogy. Therefore, it is necessary to use interdisciplinary methods to understand, compare, and contrast, supporting the research process to make the dissertation clearer.

2.3. Main results of the thesis

The thesis has achieved the following main results:

Firstly , the thesis has systematized and supplemented the theoretical basis for the application of information technology in teaching for students majoring in Music Education. Based on an overview of research works both domestically and internationally, the thesis clarifies the concepts, characteristics, roles, levels of application of information technology, and components of the process of applying information technology in teaching, while also identifying factors influencing the application of information technology in music teacher training in the context of digital transformation.

Secondly , the thesis comprehensively surveyed and evaluated the current state of information technology application in teaching at the National University of Arts Education through surveys of lecturers, students, and general music teachers. The survey results showed that information technology has been applied in teaching activities but is not yet synchronized; the ability of some lecturers and students to use specialized software, exploit digital learning materials, and build electronic lectures is still limited; the database serving music teaching has not been fully developed and does not meet the requirements

of educational reform and digital transformation.

Thirdly , based on theoretical and practical research, the thesis proposed a system of four measures for applying information technology in teaching music education students, including:

- Applying music software in teaching;
- Develop a database and digital learning resource repository to support music education;
- Adjust the content and teaching methods of the Specialized Informatics course to align with the development of digital competencies;
- Organize training sessions to enhance lecturers' capacity in applying information technology.

The four measures were developed based on the principles of synchronization, feasibility, and mutual support during implementation.

Fourthly , the thesis conducted pedagogical experiments and piloted the construction of a music teaching database to verify the feasibility of the proposed measures. The experimental results showed that the group of students who applied the measures showed significant progress in their ability to apply information technology in lesson design, use music software, utilize digital learning materials, and organize teaching activities compared to before the experiment and compared to the control group. At the same time, the music teaching database model on the website platform has initially proven effective in storing, sharing, and utilizing learning materials for teaching and learning.

Fifth : The research results of this thesis contribute to supplementing the scientific basis for innovating music teacher training in line with digital transformation, and can also be applied in the training of Music Education at the National University of Arts Education as well as serve as a reference for other music teacher training institutions in Vietnam.

Doctoral Supervisor

Doctoral student

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Luong Minh Tan