

# An Evaluation of the Reality and Proposal of Developing a Digital Transformation Strategy for Vocational Oriented Education and Enrollment Counseling Activities in High Schools in Gia Lai Province

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## Abstract

*This study aims to develop a digital transformation strategy to enhance vocational-oriented education and enrollment counseling activities in high schools in Gia Lai province, Vietnam. It addresses the challenges faced by high school teachers and university lecturers in implementing these activities. A concurrent mixed-methods design was employed, with data collected from 30 lecturers at five universities in Ho Chi Minh City, 80 teachers, and 240 Grade 12 pupils from 24 high schools in Gia Lai province. Quantitative data were analyzed using descriptive and inferential statistics, while qualitative data were examined through thematic content analysis. The analysis focused on the current status of VOE, the effectiveness of stakeholder collaboration, teachers' implementation challenges, and emerging needs for digital transformation.*

*Based on these findings, a digital transformation strategy is proposed with key components including training programs, digital learning resources, partnerships with industries and technology companies, and a technology-driven career guidance framework. These recommendations provide a practical basis for policymakers and education leaders to strengthen VOE and EC activities and better prepare pupils for the demands of a digital workforce.*

**Keywords:** *digital transformation strategy, vocational-oriented education, enrollment counseling activities, high school education.*

## 1. Introduction

The outbreak of the Covid-19 pandemic has accelerated digital transformation in education worldwide and in Vietnam. The application of digital technologies and internet-based systems has enhanced teaching, learning, educational management, teaching methods, learning support equipment, and learners' experiences across all levels, from primary to postgraduate education. Digital transformation has become crucial in overcoming geographical and logistical

barriers, improving educational quality globally and in Vietnam (World Bank, 2021; UNESCO, 2022). It enables interconnected teaching and learning activities, promotes equal and transparent access, bridges geographical distances, removes time constraints, and enhances interaction among participants.

In Vietnam, digital transformation in vocational education has gained increasing attention. On December 30, 2021, the Prime Minister issued Decision No. 2222/QĐ-TTg approving the Program for Digital

Transformation in Vocational Education until 2025, with a vision to 2030. This program promotes a shift toward digital platforms to improve management, teaching, and access. However, high schools in Gia Lai face persistent challenges in implementing vocational orientation and education (VOE) and enrollment counseling (EC), including limited resources, weak collaboration among schools, vocational institutions, and industries, and insufficient digital tools (MOET, 2022).

Building on these perspectives, this study addresses digital transformation in VOE and EC, focusing on technological solutions to local challenges and skills gaps. In line with national policy, it examines strategies to improve VOE effectiveness for high school students in Gia Lai province and identifies contextually appropriate technological applications.

Prior studies in Vietnam and internationally reinforce the importance of VOE and EC. Do et al. (2019) identify personal, familial, school, and socio-economic factors influencing students' career decisions, emphasizing the role of vocational activities. Nwakanma (2024) highlights how career education shapes perceptions of labor markets and supports 21st-century skills development. Vats and Malik (2024) underscore the importance of teacher roles and collaboration between education and industry while noting challenges such as stigmatization and slow curriculum reform. Muslim et al. (2023) emphasize integrating vocational education into curricula to strengthen career development, maturity, and decision-making, and call for stronger collaboration among institutions, businesses, and

policymakers. Collectively, these studies affirm the critical role of VOE and EC in guiding students' transitions and the necessity of stakeholder collaboration supported by digital transformation.

Despite recognizing the importance of VOE and EC, high schools in Gia Lai continue to face difficulties in delivering comprehensive career guidance. These include shortages of teaching materials and limited coordination among schools, training institutions, and industry. Given national digital transformation mandates, researching strategies to enhance VOE effectiveness through technology is essential.

This study aims to identify challenges faced by high school teachers and university lecturers in implementing VOE and EC and to develop a digital transformation strategy to improve these activities in Gia Lai. Its significance lies in addressing the growing need for digital transformation in vocational-oriented education and counseling. By identifying challenges and opportunities, the study proposes practical solutions such as digital learning resources and strengthened collaboration with industries and technology partners. These contributions not only benefit Gia Lai but also provide a model for similar contexts, supporting policymakers and education leaders in aligning education with labor market demands.

## **2. Research Methodology**

A concurrent mixed-methods approach, as outlined by Creswell (2009), was employed to provide a comprehensive analysis. This approach was selected to allow integration of quantitative trends and qualitative insights in designing digital

strategies for VOE and EC activities in Gia Lai province.

## **2.1. Data Collection**

### ***2.1.1. Quantitative Data Collection***

The study utilized a mixed-methods approach to collect data from three groups: Group (1): A purposive sampling method was used to select 30 lecturers from five universities in Ho Chi Minh City. These lecturers were chosen based on their experience in participating in enrollment counseling activities at high schools. Universities were chosen to reflect varied academic disciplines, providing a balanced perspective. Group (2): Teachers from 24 high schools in Gia Lai province (80 individuals), including both administrative and teaching staff responsible for organizing activities, as well as those directly involved in VOE. Group (3): Convenience sampling was employed to select 240 12th-grade pupils from the same high schools, ensuring the inclusion of pupils actively engaged in VOE activities.

Surveys were administered to Group (2) and Group (3) in Gia Lai province to gather data on their experiences and perceptions of current VOE and EC activities. The survey instruments were developed based on a review of existing literature and expert consultations in vocational education, and pilot-tested with participants from each group.

Quantitative data was collected via structured surveys with closed-ended questions targeting each group's perceptions and challenges related to VOE and EC. The instruments underwent a pilot test for reliability and clarity, involving ten participants from each group. Surveys were distributed via Zalo and Facebook Messengers, and in paper format to

accommodate participants' preferences. Participants were given two weeks to complete the surveys, with follow-up reminders to increase response rates.

### ***2.1.2. Qualitative Data Collection***

Purposive sampling was used to select interview participants based on their experience with VOE and EC activities. A semi-structured interview guide ensured consistent thematic coverage while allowing for probing questions. Interviews, conducted face-to-face or recorded based on participants' preferences, lasted approximately 15-20 minutes for each teacher, university lecturer, and student, aiming to gain deeper insights into their specific challenges and suggestions for improvement. Pilot interviews were conducted to refine questions and ensure they effectively elicited the necessary information within the allotted time. Follow-up questions were prepared to explore responses in greater depth if time allowed, enhancing the richness of the data.

## **2.2. Data Analysis**

Quantitative data were analyzed using SPSS version 20.0, employing descriptive statistics to summarize responses and inferential statistics (e.g., ANOVA, t-tests) to compare differences among the three groups. Qualitative data were processed through thematic analysis (Creswell, 2009; Mayring, 2000), categorizing recurring themes that provided context for quantitative trends. The integrated findings informed the proposed digital transformation strategy.

## **3. Results and Discussion**

### **3.1 Current status of VOE and EC in Gia Lai high schools**

#### ***3.1.1 Perceptions and necessity of VOE and EC activities***

Survey results show that more than 92% of participants in Groups (1) and (2) rated VOE and EC activities as “very important and necessary.” In Group (3), 90% of pupils reported the same perception for VOE, while only 67.5% did so for EC activities. A further 27.5% of pupils rated EC as “important and necessary,” and 5% considered it “not important.”

More than 95% of pupils expressed interest in VOE and EC activities. Interview data indicate that pupils consider multiple

factors when making career decisions, including personal abilities, personality traits, physical conditions, family circumstances, and labor market conditions.

An ANOVA test identified statistically significant differences in perception scores among the three groups,  $F(2, 347) = 4.44, p = .013$ , indicating variation in how VOE and EC are perceived across participants. These patterns are presented in greater detail in Table 1.

**Table 1.** The perceptions of the importance and necessity of VOE and EC activities at high schools by three groups

Scale	Vocational-oriented education			Enrollment counseling		
	Group (1)	Group (2)	Group (3)	Group (1)	Group (2)	Group (3)
Very important and necessary	93%	100%	90%	100%	92.5%	67.5%
Important and necessary	7%	0%	7.5%	0%	7.5%	27.5%
Not important and necessary at all	0%	0%	2.5%	0%	0%	5%

Overall, these results provide a statistical basis for understanding how VOE and EC perceptions vary across roles, highlighting the importance of enhancing the perceived relevance of EC activities among pupils.

**3.1.2 Management effectiveness of VOE and EC**

A total of 83% of university lecturers evaluated VOE management in high schools as effective. All surveyed school administrators (100%) reported that they had instructed teachers to implement VOE activities in alignment with MOET and DOET guidelines.

Correlation analysis between perceived management effectiveness and pupils’

perceived necessity of VOE and EC activities yielded a coefficient of  $r \approx .14$ , indicating a weak relationship.

**3.1.3 Digital strategy recommendations**

*Human resources and role allocation*

More than 65% of high school teachers reported that VOE is treated as an assigned responsibility rather than an integrated educational activity. Additionally, 75% of university lecturers indicated that EC activities are implemented without sufficient understanding of pupils’ vocational needs. A further 78% of respondents noted that EC sessions primarily focus on university admissions.

*Infrastructure and digital resources*

Approximately 89% of teachers reported insufficient facilities, including a lack of dedicated counseling spaces. Difficulties in using digital tools were reported by 77% of teachers and 68% of pupils. Furthermore, 61% of pupils indicated limited guidance in accessing online career information.

#### *Stakeholder collaboration*

Although partnerships between schools and external institutions exist, their effectiveness remains limited. More than 83% of pupils reported that external counseling sessions provide general information without individualized guidance.

#### **3.1.4 Challenges in implementing VOE and EC activities in high schools**

Despite the recognized importance of VOE and EC, several significant challenges persist:

*Insufficient staffing and role limitations:* Over 65% of high school teachers view VOE as a formal obligation rather than an integrated, impactful program, often assigned to teachers who already have primary roles. Additionally, 75% of university lecturers report that EC activities are treated as assigned tasks without sufficient insights into high school pupils' vocational needs. Furthermore, 78% of educators observe that EC sessions tend to prioritize university admissions over genuine vocational guidance, limiting the scope of career support provided.

*Inadequate infrastructure and resources:* Approximately 89% of teachers report a shortage of facilities, such as dedicated counseling rooms, primarily due

to funding constraints. Digital resources for career guidance are also limited and poorly integrated with VOE. This lack of resources impacts usability, with 77% of teachers and 68% of pupils finding it challenging to utilize digital tools effectively for vocational planning. Additionally, 61% of pupils report minimal guidance in accessing online vocational information, further limiting their exposure to career options.

*Limited collaboration among stakeholders:* Although schools have initiated partnerships with vocational institutions, colleges, universities, and businesses, these collaborations have yielded limited results. Factors hindering progress include undefined roles, lack of shared objectives, and timing issues, with most EC sessions concentrated during peak months, offering minimal support during critical career decision-making periods. Furthermore, technology is underutilized in EC activities, often restricted to brief, direct meetings. As a result, over 83% of pupils feel that external sessions provide only basic program details, lacking personalized guidance based on individual aptitudes and market demands.

These findings highlight the need for targeted resource allocation, improved digital integration, and a more coordinated approach to VOE and EC activities to better align them with pupils' vocational goals and the evolving workforce landscape.

The majority of respondents selected "Agree" or "Totally agree" across all categories, with the highest level observed in infrastructure and budget (90%) and specialized teachers (92%) (Table 2).

**Table 2.** Lecturers’ and teachers’ perceptions of difficulties in organizing VOE and EC activities (N=80)

Difficulty	TD (%)	D (%)	NS (%)	A (%)	TA (%)
1. Materials & platforms	2	5	8	65	20
2. Specialized teachers	1	3	4	70	22
3. Stakeholder collaboration	3	4	10	63	20
4. IT skills (staff & pupils)	2	3	7	68	20
5. Timing & format alignment	1	5	6	65	23
6. Infrastructure & budget	2	4	4	75	15

Note: TD = Totally disagree; D = Disagree; NS = Not sure; A = Agree; TA = Totally agree.

1. The vocational-oriented education materials have not been updated with new content and are not suitable for the local context. The website and online learning platforms have not been invested in and implemented effectively.
2. There is a lack of specialized career guidance teachers.
3. The effectiveness of collaboration with vocational training institutions, colleges, universities, businesses, and employers is limited. The coordination throughout the academic year is not consistent, and the information provided does not fully meet the needs of pupils.
4. Both teachers and pupils lack the skills to effectively use information technology for career guidance and admission counseling activities.
5. The timing, frequency, and format of enrollment counselling activities do not align with the preferences of pupils.
6. High schools lack the necessary infrastructure to support vocational-oriented education activities, and the allocated budget for these activities is limited.

**3.2. Solutions for developing strategy of digital transformation to enhance the quality of VOE and EC activities**

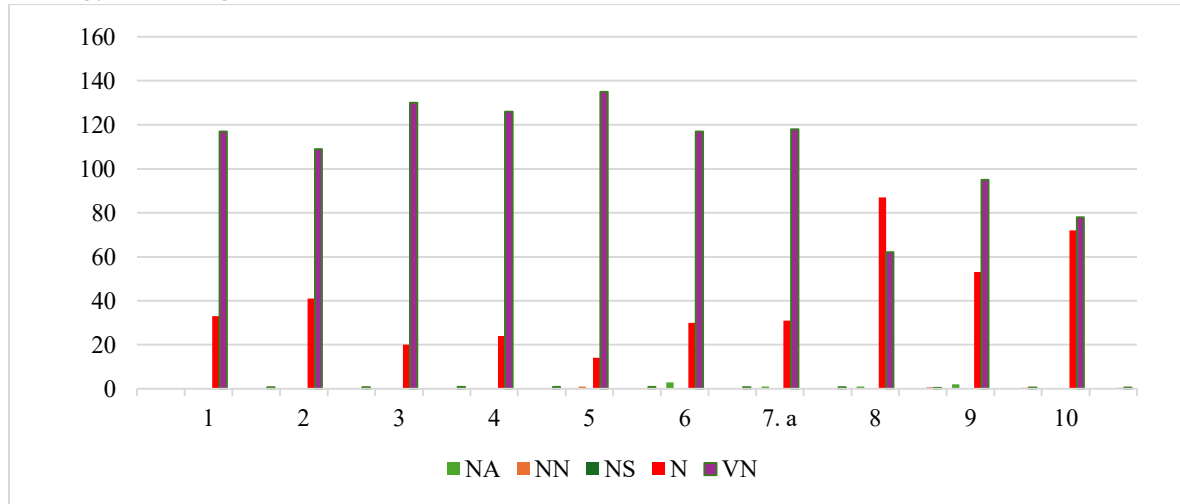
**3.2.1 Proposed solution foundation**

In order to make a breakthrough in the quality of VOE and EC activities for general education in the digital age, and to contribute to the proper orientation of pupils' career choices that align with the requirements of socio-economic development, several related legal documents and implementation plans have been issued regarding the activities of career guidance and TVET. These foundational documents include: (1) Decision No. 2222/QD-TTg, which approves the Program of Digital Transformation in Vocational Education until 2025, promotes the digitalization of vocational education, integrates digital technologies into the system, and aims to improve the quality of vocational training,

workforce skills, labor productivity, and national competitiveness in a global context (Prime Minister, 2021); (2) Decision No. 664/QD-UBND, which outlines the “Enhancing the Application of Information Technology and Digital Transformation in Education and Training (2022–2025)” plan, focuses on improving educational quality, strengthening competitiveness, and supporting sustainable development within the province (People’s Committee of Gia Lai Province, 2022); (3) Plan No. 536/KH-GDTrHCTTX, which aims to promote digital transformation in teaching and learning from 2022 to 2025, emphasizes enhancing teachers’ and pupils’ digital literacy, improving educational quality, and fostering collaborative experience-sharing among teachers in the use of digital tools (Department of Education and Training, Gia Lai, 2023).

The findings further underscore the urgent need to refine methods and organizational structures to enhance VOE and EC activities. The research also confirms a strong demand for a comprehensive digital transformation strategy that aligns VOE and EC activities

with the requirements of an evolving labor market. To further illustrate this demand, Figure 1 presents university lecturers and high school teachers' perceptions of the necessity of developing such a strategy, highlighting key priority areas.



**Note:**

1. Building a digital transformation foundation.
2. Providing digital resources.
3. Creating a positive learning environment and enhancing interaction.
4. Evaluating and innovating educational programs.
5. Training and enhancing teachers' competences.
6. Strengthening collaboration with businesses and employers.
7. Developing personalized counseling and support programs.
8. Expanding internship and apprenticeship networks for high school pupils.
9. Creating innovative career education activities.
10. Establishing post-graduation support.

NA: Not necessary at all; NN: Not necessary; NS: Not sure; N: Necessary; VN: Very necessary

**Figure 1.** Perceptions of university lecturers and high school teachers on developing a digital transformation strategy to enhance VOE and EC activities

**3.2.2. Developing a digital transformation strategy to enhance the quality of VOE and EC activities at high schools in Gia Lai province**

Based on the analysis of current VOE and EC activities, an effective digital transformation strategy for high schools in Gia Lai province must prioritize clear role definition and shared goals among involved parties. Establishing specific responsibilities among high schools, universities, vocational institutions, businesses, and employers will

clarify each party's role in VOE and EC efforts. Achieving unified goals is crucial to meet digital transformation requirements, emphasizing transparency, equitable access to resources, and promoting self-learning and information accessibility for pupils, teachers, and employers alike. Digital platforms should be developed to provide users with anytime, anywhere access to valuable vocational resources, fostering self-directed exploration and skill enhancement.

A critical element of the strategy is providing pupils with accurate, relevant career information. Digitalized career content should be regularly updated and jointly developed by participating institutions to ensure pupils are well-informed of their career options, the skills required for various professions, and the changing demands of the labor market. This approach will assist pupils in aligning their career decisions with their personal competencies and labor market needs.

Strategic activities and core resources must be established to ensure the success of the digital transformation strategy. Central to this effort is the development of an easy-to-navigate online platform that provides comprehensive information on educational institutions, including detailed admissions data, course descriptions, and career pathway insights. Additionally, the platform should feature an online profile management system, enabling pupils to maintain academic records and interact with informational resources. Mobile applications compatible with major operating systems will also simplify access to career counseling materials, allowing pupils and parents to access essential information conveniently.

The strategy should emphasize the importance of collaborative and interactive learning environments. By implementing group projects and practical exercises, pupils will have opportunities to develop essential skills such as communication, teamwork, and problem-solving. Collaborative networks linking high schools with colleges, universities, businesses, and employers will create real-world interaction channels, including online counseling, career discussions, and professional exchanges,

enhancing pupils' career readiness through practical experiences.

To effectively deliver this strategy, teachers require support and training to build digital competencies. Professional development initiatives should focus on enhancing teachers' use of technology for VOE and EC activities, fostering consistency in career guidance practices. Additionally, creating a knowledge-sharing network among teachers will facilitate resource exchange and encourage a unified approach to career education, further strengthening the educational framework.

Lastly, a key component of the digital transformation strategy is the development of personalized digital counseling programs. By offering interactive counseling sessions through digital platforms, including Q&A, quizzes, and multidimensional simulations, pupils will have a tailored experience that allows them to explore personal interests, abilities, and career aspirations in a guided, engaging format. This approach supports pupils in making well-informed decisions about their future careers, aligned with both individual goals and societal demands.

#### **4. Discussion**

The findings indicate that, although vocational-oriented education (VOE) and enrollment counseling (EC) are widely recognized as important, their implementation remains uneven. Differences in perception between pupils and educators suggest that the value of EC activities is not consistently experienced, particularly among pupils.

The weak correlation between management effectiveness and pupils' perceptions further indicates that administrative efforts do not necessarily translate into meaningful engagement. This

gap highlights limitations in how VOE and EC are communicated and delivered at the school level.

The identified challenges, particularly those related to infrastructure, human resources, and stakeholder collaboration, reflect structural constraints rather than isolated operational issues. Limited facilities, insufficient digital resources, and unclear institutional roles collectively restrict the effectiveness of current practices.

These findings align with prior research emphasizing the importance of interaction between educational and workplace contexts (Bakker and Akkerman, 2019; Leeman and Wardekker, 2011). However, the present study shows that such integration remains difficult to operationalize in the local context. The relatively high proportion of “not sure” responses regarding collaboration further suggests that coordination mechanisms are not yet consistently established.

Digital transformation emerges as a potential means of addressing these limitations. However, the results indicate that technological adoption alone is insufficient. Reported difficulties in accessing and using digital tools highlight the importance of enabling conditions, including infrastructure, digital competence, and institutional alignment. In this respect, the findings support a broader understanding of vocational guidance as a context-dependent process requiring coordinated development across multiple dimensions (Guichard, 2022).

Building on these results, several practical implications can be identified. Strengthening digital infrastructure, enhancing teachers’ capacity to use

technology, and improving coordination among schools, vocational institutions, and employers are central to effective implementation. The development of integrated digital platforms may further support more consistent and accessible career guidance for pupils. These implications suggest that digital transformation should be approached as a systemic process rather than a purely technological intervention.

## 5. Conclusion

This study demonstrates that digital transformation provides a viable pathway for improving vocational-oriented education (VOE) and enrollment counseling (EC) in high schools in Gia Lai province. The findings highlight persistent challenges related to infrastructure, human resources, and stakeholder coordination, offering an empirical basis for more targeted and context-sensitive interventions. This study contributes by clarifying how these structural constraints shape the effectiveness of VOE and EC in a localized educational context undergoing digital transition.

Future research should examine how these strategies influence students’ career readiness over time and assess their applicability in other regional contexts in Vietnam. Further studies could also explore the use of emerging technologies, such as artificial intelligence and virtual reality, in vocational guidance, particularly from the perspectives of pupils and other stakeholders.

## Conflict of Interest

The authors declare no conflict of interest.

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