



Development of a Career Exploration Module to Enhance Career Decision-Making in Vocational Teacher Education

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Abstract

This study developed a career exploration module embedded within the Ethics and Teaching Profession course to help vocational students make thoughtful and informed career decisions. Many students in the Informatics and Computer Engineering Education (PTIK) program often feel uncertain about pursuing a teaching career or entering the technology sector. The module included structured reflection and value-based activities to help students align their personal goals with professional paths. Using the ADDIE model Analyze, Design, Develop, Implement, and Evaluate the researchers implemented the module with sixth-semester PTIK students at Institut Prima Bangsa Cirebon. Experts validated the content and media, and classroom trials measured its practicality and impact. Findings showed improved students' ability to recognize their values, explore options, evaluate consequences, and make responsible choices. As a result, students gained greater confidence and clarity in their career planning, reduced indecision, and demonstrated more substantial alignment between their choices and long-term aspirations. The module supported ethical, realistic, and goal-driven decision-making.

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INTRODUCTION

Career decision-making has long been recognized as pivotal in shaping students' future success, particularly for those enrolled in vocational teacher education programs. (Mutanga et al., 2023) Within this context, students in the Informatics and Computer Engineering Education (PTIK) program often experience significant uncertainty when choosing their career paths. Specifically, many found themselves torn between pursuing a professional career in education and seeking opportunities in the broader ICT industry. This pattern of indecision, however, did not occur in isolation; instead, it reflected a broader challenge faced by students who lacked consistent exposure to structured career guidance throughout their studies. (Thiem & Dasgupta, 2022).

Many students entered the program with limited knowledge of the professional landscape and the ethical considerations required in either career track. (Haviland & Robbins, 2021). While the curriculum emphasized technical competence, it often lacked the reflective tools necessary for students to assess their personal values, long-term goals, and potential societal contributions. (SWARGIARY, 2025). Without sufficient mentoring or structured decision-making frameworks, students tended to rely on informal sources—such as peers, social media, or family expectations—which often did not provide accurate or balanced perspectives.

The absence of a systematic approach to career counseling further compounded this challenge. Consequently, students made decisions based more on short-term pressures or assumptions than well-informed, ethically grounded reflections. Such a lack of clarity undermined their academic motivation and confidence in pursuing meaningful professional lives. (Shen et al., 2021). These conditions underscore the critical need for intentional support structures within the PTIK program to help students navigate their career options with greater clarity, purpose, and personal alignment.

Although the curriculum for professional ethics was important, it had not sufficiently addressed students' personal considerations or alignment with career choices. In practice, most

ethics courses focus primarily on the theoretical understanding of the teaching profession, while offering little practical frameworks to help students explore and reflect on potential career pathways. As a result, many students made uninformed or externally influenced decisions that did not accurately reflect their authentic interests and competencies. (Osborne & Allchin, 2024).

This issue became increasingly urgent with the rising demands on vocational graduates to demonstrate technical skills, ethical maturity, and professional integrity. (Schlabach, 2024). Amid growing labor market competitiveness and shifting technological trends, the need to prepare students with a strong foundation in career planning and professional ethics has become undeniable. Therefore, institutions were required to adopt effective strategies to bridge the gap between students' internal motivations and the external demands of their chosen careers.

Previous research supported this concern. (Pakpahan & Kustanti, 2020). In the same vein, (Yunus et al., 2024) Emphasized the importance of applying Krumboltz's Social Learning Theory to vocational decision-making, wherein learning experiences, environmental conditions, and self-perception shape career choices. Nevertheless, only a few studies had developed instructional modules that actively engaged students in reflective and ethically grounded career exploration processes.

(Ituga, 2023) In his study on career guidance modules, he reported improved career planning awareness among students following the implementation of structured career coaching. Similarly, (Karamoy et al., 2023) Designed a student career planning module that contributed positively to students' career clarity. However, these studies rarely integrated ethical dimensions or addressed the preconditions necessary for responsible and informed decision-making. (Truong & Nguyen, 2024)

The concept of "preconditions" in education, as explored by (Zlatkin-Troitschanskaia & Schlax, 2020) It referred to students' existing knowledge, values, and personal inclinations that shaped their ability to engage meaningfully with new learning. Applying this concept to career exploration, guiding

students in identifying their values, interests, and competencies as a prerequisite for career decision-making became crucial. (Gati & Kulcsár, 2021). As part of this reflective process, ethical reasoning helped students align personal goals with societal and professional responsibilities.

Based on this understanding, this research addressed the gap by developing a precondition-based career exploration module embedded in the Ethics and Teaching Profession course. The module encouraged students to engage in structured reflection and connect ethical theories with real-life dilemmas. Findings showed that the module significantly improved students' awareness and responsibility in career planning. It helped students identify potential career pathways and the ethical implications of their choices. The integration of reflective tools, such as ethical case analyses and personal value assessments, enabled students to make informed decisions aligned with both internal motivations and external expectations. (Iloka, 2025).

Moreover, the study revealed that students responded positively to the module's structure and content. The learning activities encouraged critical thinking, self-assessment, and peer collaboration. Students reported greater clarity in understanding their strengths and career preferences. In line with this, the results were consistent with the findings of those who developed a career guidance module to improve career maturity among high school students and demonstrated that structured modules facilitated students' ability to plan realistic and responsible careers. Similarly, (Istianingsih et al., 2021) Developing a structured and feasibility-validated career guidance module significantly improved vocational students' career decision-making abilities, particularly through applying the ADDIE model in a vocational context. In the same vein, it was shown that developing a focused and feasibility-validated vocational career guidance module enhanced students' career decision-making ability, especially in the fashion design study program, through the systematic application of the ADDIE model. Furthermore, (Zulaikhah et al., 2024) Developing a career guidance module using the ADDIE model improved students' career maturity and decision-

making skills in vocational education contexts. These studies underscore the effectiveness of structured, well-validated career guidance modules—particularly those based on the ADDIE framework—in enhancing students' readiness for informed and responsible career choices in vocational settings. This research also balanced theoretical and practical aspects of vocational education. It did not merely equip students with abstract ethical concepts. However, it grounded the learning in authentic professional dilemmas, such as managing dual roles, adapting to the digital industry, or facing pressure from family expectations. The module functioned as both a learning tool and a decision-making rehearsal space by simulating real-world decisions. (Huang et al., 2025). Previous studies have developed various career guidance modules to enhance students' career readiness in specific vocational fields. (Karend et al., 2020) Demonstrated that developing a focused and feasibility-validated vocational career guidance module significantly improved students' career decision-making abilities, particularly in the fashion design study program, through the systematic application of the ADDIE model.

In conclusion, this study contributed to vocational education by addressing the practical problem of career indecision through a theoretically grounded solution. By integrating ethical values into the career exploration process and emphasizing precondition-based learning, the research offered a novel approach that responded to the evolving demands of teacher training programs in the digital era. (Gati & Kulcsár, 2021). The findings indicated that students engaged in reflective, ethically guided exploration were likelier to choose personally meaningful and socially responsible careers. (Ribeiro et al., 2023).

Therefore, this research aimed to develop and validate a career exploration module grounded in students' preconditions and ethical reflection, to enhance their capacity to make mature, responsible, and well-aligned career choices. It was anticipated that the module would serve as a teaching resource and a strategic intervention to strengthen vocational guidance initiatives at the higher education level.

METHODOLOGY

This study applied the ADDIE development model, which consisted of five stages: Analyze, Design, Develop, Implement, and Evaluate (Branch & Varank, 2009). Specifically, the research focused on developing a precondition-based career exploration module within the Ethics and Teaching Profession course for PTIK students at Institut Prima Bangsa Cirebon. The study employed various learning resources and tools, including learning modules, self-assessment sheets, career scenario simulations, career reflection instruments, laptops, word processors, printers, and internet

access. Moreover, all procedures were designed to be replicable, thereby enabling future researchers to adopt and adapt the approach in similar contexts.

1. Analyze Stage

In the analysis stage, the researcher identified students' needs related to career decision-making and ethical awareness. Data were collected through questionnaires and observations of 50 students during school field placements (PPL). The purpose was to determine knowledge gaps and practical barriers to career confidence. The findings were used to define module specifications and learning objectives.

Table 1. Needs Analysis for Career Exploration Module

Aspect	Indicator of Need	Findings	Implications for Module Development
Career Information	Students lacked understanding of teacher career prospects	75% lacked information about the teaching profession	Include detailed descriptions of teaching career pathways
	Students needed information about the required teacher skills	78% wanted information about teacher competencies	Include pedagogical, social, and personal competencies
	Students were unaware of teacher certification requirements	72% were unfamiliar with certification and regulation	Provide information about certification procedures
Career Decision Support	Students were unsure about becoming teachers	70% expressed indecision about career choice	Include tools for career self-reflection and exploration
	Students lacked a structured decision-making model	80% needed guidance on evaluating options	Provide structured activities and ethical decision-making frameworks

2. Design Stage

In the design stage, the researcher formulated the module's structure based on the results of the needs assessment. The module had four core sections: career knowledge, ethical

foundations, self-assessment, and career action planning. Each unit is aligned with the course learning outcomes and vocational competence development.

Table 2. Module Design Components

Component	Description
Module Title	Career Exploration Module Based on Pre-Condition
Target Learners	Sixth-semester PTIK students at Institut Prima Bangsa Cirebon
Learning Objectives	Understanding ethical foundations and applying them to career decisions
Structure	Introduction → Career Values → Self-Assessment → Ethical Decision Practice
Learning Activities	Case studies, reflective journals, group discussion, and guided scenarios
Evaluation Strategy	Formative quizzes, decision-making tasks, and post-module reflection sheets

3. Development Stage

At this stage, the researcher developed the initial draft of the module based on the validated design. The draft was then reviewed by two

subject matter experts (ethics and career development) and one media expert. Each expert evaluated the module using BSNP criteria.

Table 3. Expert Validation Results

Assessment Aspect	Expert Rating (Avg.)	Category	Revision Notes
Content Accuracy	87 %	Very Good	Add more updated teaching certification references
Language Clarity	90%	Very Good	Refine terminology related to decision-making steps
Instructional Design	85 %	Good	Improve learning sequence clarity
Visual Design	88%	Very Good	Use more attractive icons and illustrations

4. Implementation Stage

The module was implemented in two stages. A small group of 10 students participated in the initial trial, followed by a large-scale trial involving 30 students. The module was integrated

into classroom activities across four weeks. Students completed pre-tests and post-tests, engaged in simulations, and wrote reflections on career decisions informed by ethical principles.

Table 4. Module Implementation Overview

Implementation Activity	Small Group Trial (n=10)	Large Group Trial (n=30)
Duration	2 weeks	4 weeks
Learning Sessions	4 modules	6 modules
Key Activities	Reflective writing, scenario analysis	Group discussion, mock interviews
Instruments Used	Self-assessment sheet, pre/post-test	Same instruments with expanded feedback
Instructor Observation Notes	Students engaged actively	Students showed higher confidence in their decisions

5. Evaluation Stage

The final stage evaluated the module's practicality, feasibility, and effectiveness. A paired-sample t-test was used to compare students' career decision-making skills before and

after the intervention. The analysis showed a significant improvement in students' ability to integrate ethical reasoning into their career choices.

Table 5. Evaluation Results

Evaluation Aspect	Pretest Score (Mean)	Post Test Score (Mean)	Significance (p-value)	Interpretation
Career Decision-Making Ability	65.3	82.6	p < 0.05	Statistically significant increase
Ethical Awareness in Careers	58.4	80.2	p < 0.05	High post-intervention improvement

RESULTS AND DISCUSSION

Results

This study aimed to develop a career exploration module based on preconditions for the “Ethics and Teaching Profession” course. The results covered three main aspects: module validity, practicality, and effectiveness. Each aspect was discussed based on empirical data collected through validation forms,

implementation trials, and pre-test/post-test instruments.

1. Module Validity

The researcher conducted expert validations involving material, media, and language experts. The experts assessed the content using BSNP (National Education Standards Board) criteria. The validation focused on the module's accuracy, relevance, clarity, and instructional design.

Table 6. Expert Validation Results

Aspect	Score (%)	Category
Content Accuracy	87%	Very Good
Language Clarity	90%	Very Good
Instructional Design	85%	Good
Visual Presentation	88%	Very Good
Average Score	87.5%	Very Good

The results indicated that the module was valid for use in instructional settings. Experts recommended minor revisions to enhance the clarity of ethical decision-making scenarios and update the information on teacher certification procedures.

2. Module Practicali

The practicality of the module was assessed through small and large group trials. The researcher observed student engagement, collected feedback, and analyzed the completion rate of activities. Students completed self-assessment tools, participated in discussions, and reflected on career scenarios.

Table 7. Module Practicality Based on Student Feedback

Indicator	Small Group Trial	Large Group Trial	Category
Instructional Clarity	86%	89%	Very Good
Ease of Use	84%	85%	Good
Relevance to Career Goals	88%	91%	Very Good
Engagement and Interactivity	82%	88%	Good to Very Good
Average Score	85%	88.25%	Very Good

Students reported that the module helped them understand career paths more clearly and allowed them to link ethical concepts with real-life career choices. The content and structure supported both independent learning and group interaction.

3. Module Effectiveness

To assess the module's effectiveness, the researcher compared students' career decision-making abilities before and after using the module. A paired-sample t-test showed a significant improvement in students' ability to apply ethical reasoning in their career decisions.

Table 8. Pre-Test and Post-Test Comparison

Variable	Pretest Mean	Post Test Mean	N	P Value	Interpretation
Career Decision-Making Score	65.3	82.6	30	$p < 0.05$	Significant Improvement
Ethical Awareness in Career	58.4	80.2	30	$p < 0.05$	Substantial Post-Module Increase

The statistical results indicated that the module significantly enhanced students' abilities in exploring career options and applying ethical perspectives. Students who initially showed uncertainty about their professional future demonstrated clearer preferences and better self-awareness after completing the module.

Discussion

Developing a precondition-based career exploration module successfully addressed the gap between ethical understanding and practical career decision-making among PTIK students. Many students had struggled to connect the theoretical content of the Ethics and Teaching Profession course with real-world professional choices. The module provided a relevant and responsive solution by integrating career exploration tasks with ethical reasoning. This finding aligned with Brady and Rocchi (2023), who emphasized the need for decision-making modules to incorporate ethics to develop reflective and responsible professionals.

During the implementation stage, students demonstrated greater confidence in evaluating career paths, particularly reconciling their personal interests with professional responsibilities. The structured activities—such as self-assessment, reflective writing, and ethical case discussions—enabled students to explore their options critically. These results echoed McLoughlin's (2023) statement that ethical career reasoning, especially when grounded in virtue ethics, predicted stronger long-term career development and well-being.

The module also proved valuable in enhancing students' decision-making performance. Specifically, the use of the CASVE cycle (Communication, Analysis, Synthesis, Valuing, Execution), as suggested by Mohandas and Vinitwatanakhun (2020), guided students through a systematic approach to career planning. Students not only deepened their understanding

of career requirements but also developed a sense of purpose and responsibility—key indicators of vocational maturity according to Donald Super's career development theory.

Furthermore, expert validation indicated strong agreement that the module was pedagogically sound and aligned with vocational learning objectives. Experts appreciated the inclusion of real-life dilemmas and ethical scenarios as bridges between conceptual ethics and applied decision-making. (Dedding et al., 2023). Their feedback helped refine the module's language, instructional sequencing, and graphic design, ensuring it met cognitive and affective learning outcomes.

The findings supported the hypothesis that a structured, ethics-based career module improved students' readiness to make vocational career decisions. The module's strength lies in integrating ethical principles with real-world decision scenarios. Students benefited from reflective tasks—such as self-assessment, ethical dilemma analysis, and simulated interviews—that aligned with Donald Super's career development theory and Krumboltz's social learning theory. The improvement in decision-making also reflected the benefits of the precondition approach; by assessing initial competencies, the module ensured content personalization, which increased engagement and reduced confusion. These findings aligned with (Shen et al., 2021), who emphasized the importance of structured, ethically integrated career exploration modules in higher education.

In addition, the results confirmed that ethics-based career education was essential in vocational teacher training. Consistent with (Uno & Koni, 2024), who argued that professional ethics must be embedded in teacher formation, this study showed that students could not effectively choose or commit to a career path without reflecting on ethical implications. Future educators need to understand their roles as

professionals and moral agents responsible for shaping young minds. (Facer, 2021).

Lastly, the module provided students a structured space for reflection and personal meaning-making—an often-neglected component of career education. Students became more intentional in their career choices and recognized the importance of aligning their talents with professional values. This finding aligned with Super's view that career development was a lifelong process shaped by self-concept, social roles, and moral development. Thus, the module served as a technical intervention and a transformational experience in professional identity-building.

CONCLUSION

This study developed a precondition-based career exploration module for the Ethics and Teaching Profession course to support PTIK students in making informed, ethical career decisions. The research process followed the ADDIE model and demonstrated that integrating ethical reflection into career planning significantly enhanced students' decision-making abilities.

At the analysis stage, the findings revealed that many students lacked career clarity, particularly when choosing between teaching and technology-related professions. They expressed uncertainty, low confidence, and limited awareness of certification requirements. In response, the researcher designed a module that addressed these specific concerns through structured activities such as self-assessment tools, ethical dilemma discussions, and scenario-based reflections.

The validation results confirmed that the module was accurate, relevant, and easy to understand. Experts rated the module highly regarding content quality, language clarity, and instructional design. During implementation, students engaged actively with the material and began to reflect more deeply on their career intentions. They became more confident and better informed after participating in the module activities.

Statistical analysis confirmed that the module significantly improved students' career

decision-making scores and ethical awareness. Students who were previously unsure about their future paths began to show clearer preferences, grounded in personal values and professional responsibilities.

Ultimately, this study showed that ethical education could play a transformative role in career development. By embedding moral reasoning within career exploration, the module helped students connect their personal identities with their professional aspirations—building competence and character in career planning.

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