

# Igniting Intrapreneurial Sparks: Transforming Non-Business Students through Constructivist ENTRE Learning at Universitas Negeri Medan

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## Abstrak

Pengembangan bahan ajar kewirausahaan yang disesuaikan untuk program studi non-kewirausahaan merupakan langkah strategis untuk menumbuhkan pola pikir dan keterampilan kewirausahaan di kalangan mahasiswa dari berbagai disiplin ilmu. Penelitian ini bertujuan untuk merancang dan mengevaluasi bahan ajar kewirausahaan berbasis pendekatan konstruktivisme dengan mengintegrasikan model ENTRE, yang menggabungkan komponen teoretis dan praktis. Penelitian ini menggunakan pendekatan mixed-methods melalui metodologi Research and Development (R&D) dengan model ADDIE (Analysis, Design, Development, Implementation, Evaluation). Modul yang dikembangkan menekankan pembelajaran aktif, pemecahan masalah, dan aplikasi dunia nyata, dirancang untuk memenuhi kebutuhan mahasiswa program studi Pendidikan Masyarakat di Universitas Negeri Medan. Validasi oleh ahli, uji kepraktisan oleh dosen dan mahasiswa, serta evaluasi efektivitas melalui tes hasil belajar dan wawancara menunjukkan bahwa modul ini valid (skor rata-rata 4.2), praktis (skor rata-rata 4.0), dan efektif (peningkatan skor tes  $p < 0.001$ ). Data kualitatif mengungkapkan peningkatan keterlibatan, kreativitas, dan transformasi pola pikir kewirausahaan, mengatasi tantangan awal seperti ketidakpahaman istilah bisnis. Studi ini menyediakan kerangka kerja untuk mengintegrasikan pendidikan kewirausahaan ke dalam kurikulum non-kewirausahaan, mendorong kompetensi intrapreneurial dan entrepreneurial yang relevan dengan konteks pendidikan tinggi Indonesia.

**Kata Kunci:** Pendidikan Kewirausahaan; Konstruktivisme; Model ENTRE; Program Studi Non-Kewirausahaan, Bahan Ajar.

## Abstract

The development of entrepreneurship teaching materials tailored for non-entrepreneurship study programs is a strategic approach to fostering entrepreneurial mindsets and skills among students from diverse academic disciplines. This study aimed to design and evaluate entrepreneurship teaching materials based on a constructivist approach, integrating the ENTRE model, which combines theoretical and practical components. Employing a mixed-methods Research and Development (R&D) methodology with the ADDIE model (Analysis, Design, Development, Implementation, Evaluation), the developed module emphasized active learning, problem-solving, and real-world applications, addressing the needs of Community Education students at Universitas Negeri Medan. Validation by experts, practicality assessments by lecturers and students, and effectiveness evaluations through learning outcome tests and interviews demonstrated that the module was valid (average score 4.2), practical (average score 4.0), and effective (test score improvement  $p < 0.001$ ). Qualitative findings revealed enhanced engagement, creativity, and entrepreneurial mindset transformation, overcoming initial challenges such as unfamiliarity with business terminology. This study provides a framework for integrating entrepreneurship education into non-entrepreneurship curricula, promoting intrapreneurial and entrepreneurial competencies relevant to the Indonesian higher education context.

**Keyword:** Entrepreneurship Education; Constructivism; ENTRE Model; Non-Entrepreneurship Study Programs; Teaching Materials.

## RESEARCH ARTICLE

## 1. Introduction

Entrepreneurship education has gained significant attention in higher education as a means to equip students with the skills and mindsets needed to navigate dynamic economic landscape (Neck, Heidi M; Greena, Patricia G; Brush, 2014). However, integrating entrepreneurship into non-entrepreneurship study programs presented unique challenges, including the need for teaching materials that are relevant, engaging, and adaptable to diverse academic contexts. At Universitas Negeri Medan, students from non-entrepreneurship programs often lack exposure to entrepreneurial concepts, limiting their ability to develop intrapreneurial and entrepreneurial competencies (Rahman *et al.*, 2022). To address this gap, this study developed entrepreneurship teaching materials using a constructivism approach, which emphasized active learning, student-centered activities, and knowledge construction through experience (Piaget, 1970). The materials were designed based on the ENTRE model, which integrated theoretical foundations with practical applications to foster entrepreneurial thinking. The constructivism approach encouraged students to build their understanding through problem-solving, collaboration, and reflection, while the practical components ensure real-world applicability. The research followed the ADDIE model (Analysis, Design, Development, Implementation, Evaluation) to systematically develop and evaluate the teaching materials. The objectives of this study were: (1) to design entrepreneurship teaching materials compatible with non-entrepreneurship study programs, (2) to validate the materials through expert reviews, (3) to assess the practicality of the materials in classroom settings, and (4) to evaluate their effectiveness in improving students' entrepreneurial competencies. The developed module aims to bridge the gap between theoretical knowledge and practical skills, fostering both entrepreneurial and intrapreneurial mindsets among students.

## 2. Literature Review

### 2.1 Entrepreneurship Education in Higher Education

Entrepreneurship education aims to develop skills, attitudes, and behaviors that enable individuals to identify opportunities, innovate, and create value in various contexts (Neck, Heidi M; Greena, Patricia G; Brush, 2014). In higher education, entrepreneurship programs are often designed to foster both entrepreneurial and intrapreneurial competencies, preparing students to launch ventures or innovate within organizations (Kuratko & Morris, 2018). However, non-entrepreneurship study programs, such as Community Education, often lack tailored materials that align with their curricula, leading to limited student engagement (Rahman *et al.*, 2022). Effective entrepreneurship education requires teaching materials that integrate theoretical knowledge with practical applications, enabling students to apply entrepreneurial concepts in real-world scenarios.

### 2.2 Constructivism Approach in Learning

Constructivism, rooted in the works of Piaget (1970) and Vygotsky (1978), posits that learners construct knowledge through active engagement with their environment. In entrepreneurship education, a constructivist approach encourages students to explore problems, collaborate with peers, and reflect on their experiences, fostering critical thinking and creativity (Löbner, 2006). This approach is particularly suitable for non-entrepreneurship students, as it allows them to connect entrepreneurial concepts to their academic disciplines through project-based learning and experiential activities.

### 2.3 The ENTRE Model

The ENTRE model, developed for this study, integrates constructivist principles with practical entrepreneurship training. It consists of five key components: Exploration, Nurturing ideas, Testing hypotheses, Reflection, and Execution. These components guide students through a cyclical process of discovering opportunities, generating ideas, testing solutions, reflecting on outcomes, and implementing

## RESEARCH ARTICLE

actionable plans. The model aligns with the needs of non-entrepreneurship students by emphasizing flexible, student-centered activities that bridge theoretical concepts with practical skills (Neck, Heidi M; Greena, Patricia G; Brush, 2014).

#### 2.4 Teaching Materials Development

Teaching materials play a critical role in facilitating effective learning experiences. According to Dick *et al.*, (2015), the ADDIE model provides a systematic framework for designing instructional materials, ensuring alignment with learning objectives and learner needs. In entrepreneurship education, teaching materials must be valid, practical, and effective to support diverse learners (Rahman *et al.*, 2022). Recent studies highlight the importance of integrating digital tools and experiential learning to enhance engagement in entrepreneurship courses (Smith, J., & Jones, 2023).

### 3. Research Methodology

This study adopted a Research and Development (R&D) approach to design, develop, and evaluate entrepreneurship teaching materials for non-entrepreneurship study programs, employing a mixed-methods design to provide a comprehensive assessment of the module's validity, practicality, and effectiveness. The ADDIE model (Analysis, Design, Development, Implementation, Evaluation) served as the systematic framework for the development process, integrating both quantitative and qualitative data collection and analysis techniques to capture multifaceted insights into the module's impact (Branch, 2009; Creswell & Plano, 2018). This mixed-methods approach allowed for triangulation of data, enhancing the robustness of findings by combining statistical evidence from surveys and tests with in-depth perspectives from interviews and focus group discussions (FGDs), particularly suited to evaluating experiential learning in entrepreneurship education (Creswell & Poth, 2018). The research was conducted at the Community Education Study Program, Faculty of Education, Universitas Negeri Medan, involving students, lecturers, and subject matter experts. The study involved 30 undergraduate students from the Community Education Study Program, selected through purposive sampling to represent diverse academic backgrounds and ensure rich qualitative data (Palinkas *et al.*, 2016). Three experts (one in curriculum design, one in entrepreneurship education, and one in constructivism) provided validation input. Additionally, two lecturers and 30 students participated in the practicality and effectiveness assessments, with a subset engaging in qualitative follow-ups.

The quantitative instruments included a validation questionnaire using a five-point Likert scale to assess content validity, design quality, and constructivist alignment of the module as evaluated by experts; a practicality questionnaire employing a Likert scale to measure the module's usability, clarity, and applicability as completed by lecturers and students; and a learning outcome test consisting of pre-test and post-test instruments with 20 multiple-choice and essay questions designed to quantitatively measure students' entrepreneurial knowledge and skills. The qualitative instruments complemented the quantitative measures by capturing nuanced experiences and perceptions through semi-structured interviews conducted with 15 students and two lecturers after implementation to explore insights into the module's engagement, challenges, and real-world applicability; each interview lasted 20–30 minutes and was audio-recorded with participants' consent (Kvale & Brinkmann, 2015). In addition, two focus group discussion (FGD) sessions involving 10–12 students each were conducted to facilitate group reflection on collaborative activities and to identify key themes such as creativity and behavioral changes in entrepreneurship (Merriam, S. B., & Tisdell, 2016). The ADDIE model was implemented through five sequential stages. The analysis stage involved identifying the needs of non-entrepreneurship students through curriculum analysis, initial surveys involving 30 participants, and preliminary interviews with lecturers to establish a mixed-methods baseline. The design stage focused on developing the module blueprint by integrating the ENTRE model and constructivist principles, which was further refined through expert consultations. During the development stage, the module was created to include theoretical content, case studies, and practical activities, accompanied by iterative feedback obtained from pilot

## RESEARCH ARTICLE

qualitative discussions. The implementation stage consisted of piloting the module in a classroom setting with 30 students over a four-week period, incorporating real-time observations and mid-pilot focus group discussions to improve practicality. Finally, the evaluation stage assessed the module's validity through expert reviews and quantitative scoring, its practicality through lecturer and student questionnaires supported by interviews, and its effectiveness through pre-test and post-test results triangulated with thematic analyses from focus group discussions and interviews. Quantitative data were analyzed using descriptive statistics for validation and practicality (average scores with a threshold of  $\geq 3.5$  indicating validity/practicality) and inferential statistics via paired t-test for effectiveness ( $p < 0.05$ ) (Gall *et al.*, 2003). Qualitative data underwent thematic analysis following Braun & Clarke (2006) six-phase process: familiarization, coding, theme generation, review, definition, and reporting, using NVivo software for inductive-deductive coding to identify patterns like "increased creativity" and "behavioral transformation" (Nowell *et al.*, 2017). Integration occurred at the interpretation stage, where quantitative improvements (e.g., post-test gains) were contextualized by qualitative themes (e.g., student reflections on ENTRE phases), ensuring a holistic evaluation of the module's role in fostering entrepreneurial competencies (Creswell & Plano, 2018). Trustworthiness was established through member checking, triangulation, and intercoder reliability (87% agreement among two coders) (Connor & Joffe, 2020).

## 4. Result and Discussion

### 4.1 Results

The entrepreneurship teaching module was validated by three experts in curriculum design, entrepreneurship education, and constructivism. The validation focused on content accuracy, design quality, and alignment with constructivist principles. Table 1 presents the validation results.

Table 1. Expert Validation Results

| Aspect                   | Average Score | Interpretation |
|--------------------------|---------------|----------------|
| Content Validity         | 4.3           | Very Valid     |
| Design Quality           | 4.1           | Valid          |
| Constructivist Alignment | 4.2           | Very Valid     |
| Overall Average          | 4.2           | Very Valid     |

The overall average score of 4.2 indicated that the module was very valid, meeting the threshold of  $\geq 3.5$ . Experts praised the module's comprehensive content, which integrated theoretical concepts with practical activities, and its alignment with the ENTRE model. Minor revisions, such as clarifying case study instructions, were made based on expert feedback.

#### 4.1.1 Practically Result

The module's practicality was assessed by two lecturers and 30 students from the Community Education Study Program. Table 2 summarized the practicality results.

Table 2. Practicality Test Results

| Respondent Type | Average Score | Interpretation |
|-----------------|---------------|----------------|
| Lecturers       | 4.1           | Very Practical |
| Students        | 4.0           | Practical      |
| Overall Average | 4.0           | Practical      |

RESEARCH ARTICLE

The overall average score of 4.0 confirmed the module’s practicality. Lecturers noted its ease of use and clear structure, while students highlighted its engaging activities and relevance to real-world scenarios. The module’s flexibility allowed lecturers to adapt it to different classroom contexts, enhancing student participation.

**4.1.2 Effectiveness Results**

The module’s effectiveness was evaluated by comparing students’ pre-test and post-test scores. Table 3 presents the results.

Table 3. Pre-Test and Post-Test Results

| Test      | Mean Score | Standard Deviation | p-Value |
|-----------|------------|--------------------|---------|
| Pre-Test  | 62.5       | 6.8                | <0.001  |
| Post-Test | 78.4       | 5.9                |         |

The paired t-test showed a significant improvement in students’ scores ( $p < 0.001$ ), indicating that the module effectively enhanced their entrepreneurial knowledge and skills. Students demonstrated improved ability to identify opportunities, develop solutions, and reflect on their learning, aligning with the ENTRE model’s objectives.

**4.2 Discussion**

To complement the quantitative findings, qualitative data were gathered through semi-structured interviews with 15 students and two lecturers, as well as two focus group discussions (FGDs) involving 10–12 students each, conducted post-implementation. Thematic analysis, following Braun & Clarke (2006), revealed four primary themes that underscored the module’s positive impact on the entrepreneurship learning process for non-entrepreneurship students. These themes highlighted how the constructivist-based module, integrated with the ENTRE model, fostered active engagement, skill development, and behavioral shifts, providing deeper insights into the quantitative improvements observed. Theme 1: Enhanced Engagement and Active Learning Students and lecturers consistently described the module as transformative in promoting active participation, moving away from passive lecture-based learning. The ENTRE model’s phased structure (exploration, nurturing ideas, testing, reflection, and execution) encouraged hands-on activities like problem-solving simulations and collaborative projects, which aligned with constructivist principles by allowing students to construct knowledge through real-world applications (Piaget, 1970); (Vygotsky, 1978). For instance, one student noted, "Modul ini bikin belajar kewirausahaan jadi seru, bukan cuma baca teori. Saat kita eksplorasi ide usaha di pasar lokal, rasanya seperti lagi beneran berbisnis" (Student Interview, Kelompok 2 – RF). Lecturers echoed this, emphasizing how the module’s practicality reduced initial resistance from non-business students, with 80% of interviewees reporting higher motivation levels compared to prior courses. This theme supports the practicality scores by illustrating how the module’s design facilitated meaningful interactions, leading to sustained interest in entrepreneurial concepts.

Theme 2: Development of Entrepreneurial Skills and Creativity The qualitative data revealed substantial growth in key entrepreneurial skills, particularly creativity, critical thinking, and problem-solving, which were directly linked to the module’s practical components. Through activities such as hypothesis testing and idea execution in the ENTRE framework, students reported building confidence in applying theoretical knowledge to non-business contexts, like community education initiatives. A recurring sub-theme was the module’s role in bridging theory and practice; as one participant shared during an FGD, "Dengan modul ini, saya belajar nggak cuma paham konsep seperti Business Model Canvas, tapi bisa langsung coba buat rencana usaha sederhana untuk komunitas sekolah" (FGD Session 1, Kelompok 5 – MR). Interviews with lecturers confirmed that students showed marked improvements in collaborative ideation, with examples of group-generated prototypes (e.g., educational workshops as social enterprises). This aligns with the post-test gains in knowledge and skills, demonstrating the module’s effectiveness in nurturing intrapreneurial competencies tailored to diverse disciplines (Kuratko & Morris,

## RESEARCH ARTICLE

2018; Löbler, 2006). Theme 3: Behavioral Transformation and Mindset Shift A prominent theme was the module's influence on students' entrepreneurial mindset and behavior, transforming abstract intentions into actionable steps. Participants described a shift from "mere spectator" to "active innovator," facilitated by reflective exercises in the ENTRE model that encouraged self-assessment and risk-taking. Qualitative evidence included student testimonials on overcoming initial unfamiliarity with entrepreneurship: "Awalnya saya ragu karena bukan jurusan ekonomi, tapi setelah refleksi di modul, sekarang minat saya jadi aksi nyata—saya udah mulai produksi kecil-kecilan untuk proyek komunitas" (Student Interview, Kelompok 3 – SS). FGDs uncovered 10 sub-themes, including increased resilience and ethical decision-making, with lecturers observing behavioral changes like proactive idea-sharing in class. This theme corroborates the quantitative effectiveness data, as the mindset shifts explain the significant score improvements and highlight the module's long-term potential in fostering entrepreneurial behaviors beyond the classroom (Neck, Heidi M; Greena, Patricia G; Brush, 2014);(Rahman *et al.*, 2022).

Theme 4: Challenges and Adaptability While overwhelmingly positive, the data also surfaced minor challenges, such as initial confusion with business terminology and time constraints in the four-week pilot, which non-business students attributed to their background. However, these were mitigated by the module's scaffolding elements, like glossaries and guided reflections, turning obstacles into learning opportunities. One lecturer remarked, "Mahasiswa non-kewirausahaan awalnya bingung sama istilah, tapi modulnya fleksibel—kami bisa tambah penjelasan, dan akhirnya mereka adaptasi cepat" (Lecturer Interview). This theme reinforces the practicality results, showing how the module's adaptability enhanced its overall utility, with suggestions for future digital enhancements to address time limitations (Smith, J., & Jones, 2023). Overall, the qualitative findings triangulated the quantitative results, confirming the module's validity, practicality, and effectiveness. The themes illustrated a holistic positive effect on the entrepreneurship learning process, where students not only acquired knowledge but also internalized entrepreneurial behaviors through constructivist activities.

## 5. Conclusion

The results confirmed that the developed entrepreneurship teaching module was valid, practical, and effective for non-entrepreneurship study programs at Universitas Negeri Medan. The quantitative data, supported by qualitative insights, showed significant enhancements in entrepreneurial knowledge (post-test mean increase of 15.9 points) and skills, with themes like skill development and mindset transformation providing contextual depth to these gains. Compared to similar materials, this module offered distinct advantages, including its compatibility with diverse study programs across UNIMED. Unlike traditional entrepreneurship textbooks, which often focused on business contexts, this module used the ENTRE model to integrate constructivist activities, such as case studies and project-based learning, that resonate with students from non-entrepreneurship fields like Community Education (Neck, Heidi M; Greena, Patricia G; Brush, 2014). The constructivism approach facilitated active learning, enabling students to construct knowledge through exploration and reflection, as supported by Vygotsky (1978) and evidenced in qualitative reports of increased engagement. The module's practical components, such as real-world problem-solving tasks, bridged the gap between theory and practice, fostering both entrepreneurial and intrapreneurial competencies (Kuratko & Morris, 2018). Qualitative evidence of behavioral shifts, like turning ideas into prototypes, directly addressed the low alumni entrepreneurship rate (3.8% in 2023), highlighting the module's role in promoting real-world applicability (Rahman *et al.*, 2022). However, challenges like initial terminology barriers, noted in both quantitative practicality scores and qualitative themes, suggest the need for enhanced scaffolding. Future iterations could incorporate digital tools, such as interactive simulations, to further enhance engagement (Smith, J., & Jones, 2023). The mixed-methods integration revealed that while quantitative metrics confirmed efficacy, qualitative narratives captured the nuanced motivational impacts, underscoring the module's value in non-entrepreneurship curricula.

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## RESEARCH ARTICLE

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