

NEEDS ANALYSIS FOR DEVELOPING A STRUCTURED CAREER GUIDANCE MODULE FOR PRE-UNIVERSITY STUDENTS IN MALAYSIA

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Abstract: *Career decision-making at the pre-university stage in Malaysia represents a high-stakes transition, yet many students select fields of study with limited systematic guidance, contributing to uncertainty and weak career readiness. Guided by the need to align educational provision with lifelong learning goals and national priorities for skills development, this study conducted a needs analysis to inform the development of a structured career guidance module for pre-university students. Using a quantitative survey design, data were collected from 83 counsellors and education officers serving across pre-university settings (e.g., matriculation colleges, Form Six institutions, and daily schools offering Form Six) via convenience sampling. The Module Needs Analysis Questionnaire demonstrated strong content validity (CVI = .90) and good internal consistency (Cronbach's $\alpha = .861$). Descriptive analyses revealed unanimous agreement that career planning at the pre-university level was important and that structured guidance was necessary (100%). Respondents also reported students' low awareness of systematic career planning (100%), limited concern about career planning (85.5%), low programme involvement (81.9%), and a tendency to opt out when participation was optional (69.1%). Although existing career programmes were perceived as beneficial, only 27.7% of institutions reported implementing module-based career programmes, indicating a substantial implementation gap. Overall, the findings supported the development of a standardised, theory-informed, and scalable module. The module should prioritise increasing systematic career planning awareness and participation, while addressing key determinants of career decision readiness through constructs commonly emphasised in the literature, including career adaptability, career maturity, and dysfunctional career thinking.*

Keywords: *needs analysis; career guidance module; pre-university students*

Introduction

Sustainable Development Goals (SDG) 4 emphasises the provision of inclusive, equitable, and quality education and lifelong learning opportunities, including students' personal and career development, to face a rapidly changing labour market (United Nations, 2015). Accordingly, the Ministry of Education Strategic Plan 2024–2030 focuses on producing highly skilled graduates through educational transformation that emphasises higher-order thinking, digital literacy, data analysis, and complex problem-solving (Kementerian Pendidikan Malaysia, 2024). In Malaysia, SPM leavers have various pre-university pathways such as the matriculation programme, yet field-of-study choices are often made without sufficient career guidance, leading to confusion, academic stress, and uncertainty about educational direction. Although the matriculation programme provides a strong foundation for higher education, concerns remain about the fit between students' chosen fields and their interests and skills, as well as the challenges of adapting to the workplace after graduation.

Problem Statement

In Malaysia, unemployment among youth aged 15–24 remains elevated relative to the overall unemployment rate, signalling persistent school-to-work transition challenges (Bahagian Perancangan dan Penyelidikan Dasar Pendidikan, 2024). However, the present study addresses this issue at the institutional level by examining pre-university students' career decision readiness and the requirements for a structured, module-based career guidance (psychoeducational) programme. Factors such as a mismatch between jobs and interests, lack of self-confidence, weak communication skills, and negative career thinking prevent graduates from making effective career decisions (Roswita & Riasnugrahani, 2023). Dysfunctional career thinking, low career maturity, and limited career adaptability also reduce pre-university students' ability to adjust to academic and work environments (Savickas, 1997). Therefore, this study conducted a needs analysis to identify priority career-planning issues among Malaysian pre-university students and to determine institutional requirements for developing a structured, module-based career guidance (psychoeducational) programme.

Accordingly, this study focuses on proximal outcomes (e.g., career decision readiness, dysfunctional career thinking, career maturity, and career adaptability) rather than distal labour-market outcomes (employment status), which are shaped by broader macroeconomic and labour-demand conditions. Career development issues among pre-university students in Malaysia have become increasingly evident, including mismatches between fields of study and employment, low confidence in decision-making, dysfunctional career thinking, low career maturity, and weak career adaptation. Students often assume that a degree guarantees employment aligned with their field of study, yet misalignment between education and labour market demands is associated with weaker school-to-work alignment and may indirectly relate to employment outcomes through career decision readiness and informed educational choices. Limited self-awareness, labour market knowledge, and career exploration experiences cause students to hesitate and feel less confident in determining their future direction (Jackson & Tomlinson, 2020; Julien et al., 2023). This uncertainty can undermine engagement in career planning and is associated with heightened psychological distress and mental health concerns in uncertain contexts (Kienzler et al., 2025).

Dysfunctional career thinking refers to patterns of negative thinking that hinder effective career decision-making (Sampson et al., 2000). Thoughts such as self-doubt and fear of failure can weaken psychological readiness, reduce self-efficacy, and contribute to a weak vocational identity (Coleman et al., 2023). At the same time, many pre-university students demonstrate low

to moderate career maturity due to limited exposure to career education, which leaves them unprepared to plan for the future and dependent on external guidance (Kurniawati, 2021; Zhao & Wu, 2022).

Career adaptability is also a major challenge during the transition from school to higher education, as students often lack concern, control, curiosity, and confidence in facing an uncertain world of work (Savickas & Porfeli, 2012). If left unaddressed, career confusion can lead to long-term consequences such as dropout, delayed entry into the labour market, and widening socioeconomic gaps. Although many career intervention modules have been developed, most focus on adults or university students, while modules specifically designed for pre-university students remain limited. Hence, the development of a comprehensive, empirically grounded intervention is critically needed to help pre-university students plan their careers more effectively.

To address these challenges, an evidence-based intervention that is aligned with the actual needs of pre-university students and the institutional context is required. In this study, a needs analysis was conducted as an essential preliminary step to inform the development of a career psychoeducational module.

A needs analysis is a systematic evaluation process for gathering evidence about the needs of a target population and the implementation context (McKillip, 1998). Accordingly, a needs analysis is undertaken to meet the study objectives. The assessment involves relevant stakeholders and focuses on the intended target group to identify priority areas that should be addressed through an appropriate intervention module. Once the needs analysis findings are established, the module development process proceeds based on the identified needs.

Objective

1. To assess stakeholders' perceptions of pre-university students' career readiness and to identify priority career-planning issues.
2. To determine institutional needs and design requirements for a structured, module-based career guidance programme.

Literature Review

The Need for Structured Career Guidance for Pre-University Students

The pre-university phase is a critical decision point because students must align their interests, abilities, and study pathways before academic commitments become increasingly “locked in”, which heightens the risk of misalignment when career information and exposure to options are not delivered systematically (Lent et al., 1994). The adolescent career development literature shows that school-based support functions as a form of “decision infrastructure” that strengthens goal clarity and the quality of career choices, especially when delivered through explicit and recurring programs rather than ad hoc activities (Wang et al., 2024). In the Malaysian context, evidence indicates that constructs such as career knowledge, career adaptability, and interests are associated with career choice among students in skills-training institutions, signalling the need for early interventions that structure exploration and decision-making (Ashari et al., 2019).

Core Constructs for A Structured Career Guidance Module

Contemporary vocational research positions *career adaptability* as a key psychosocial resource for managing tasks, transitions, and career uncertainty, corresponding with the career construction theory (CCT) (Savickas & Porfeli, 2012). Meta-analytic evidence shows that career adaptability is consistently associated with adapting responses and adaptation outcomes, making it suitable as a primary module outcome (Rudolph et al., 2017). At the same time, *career decision-making self-efficacy* is an important motivational mechanism in social cognitive career theory (SCCT) because it shapes choices, effort, and persistence during the decision process (Lent et al., 1994). Local evidence from Malaysian foundation-program students indicates that career maturity and decision-making self-efficacy predict career adaptability, which strengthens the rationale for positioning these three constructs as central targets in a pre-university module (Abdul Rahim et al., 2021). In addition, the Cognitive Information Processing (CIP) approach emphasises that decision-making difficulties are often driven by disorganized career information processing and negative cognitions, so the module should include components for structuring information and correcting maladaptive thinking patterns that disrupt decision-making (Sampson et al., 2000).

The Effectiveness of Module-Based Career Interventions and Group Counselling.

A systematic review of career interventions for secondary school students indicates that the most effective programs use a structured format (for example, a series of sessions), with dominant outcomes in career adaptability and decision-making competence (Wang et al., 2024). Despite these positive effects, the intervention literature is uneven in construct specification and often emphasises post-test gains without detailing which components drive change, which limits transferability across institutional contexts. This strengthens the need for a local needs analysis that specifies target constructs, sequencing, and delivery constraints before module development. Theory-driven intervention studies also show that group counselling integrating elements of CIP and SCCT can enhance career adaptability among secondary school students, supporting the use of organised modular activities grounded in clear mechanisms of change (Wang & Liu, 2022). Evidence from workshop-style interventions further reports gains in *career self-efficacy* when modules emphasise a sequenced set of components such as self-awareness, exploration, education-to-career pathways, real-world exposure, and decision training, which aligns with structured module design for pre-tertiary learners (Jemini-Gashi et al., 2023).

Synthesis and Research Gap.

Overall, the international literature demonstrates that structured career interventions improve key career-related psychological outcomes, particularly adaptability and decision-making competence, and these effects are most robust when interventions are theory-based (SCCT, CCT, CIP) and delivered as a sequence rather than a one-off activity (Rudolph et al., 2017; Wang et al., 2024). However, a salient gap remains in the Malaysian context: indexed studies largely focus on vocational students, skills training, or university foundation programs, whereas module designs tailored to mainstream pre-university ecosystems remain limited in terms of construct specification, content sequencing, and fit with institutional implementation realities (Abdul Rahim et al., 2021; Ashari et al., 2019). This gap suggests that Malaysian pre-university settings lack an empirically specified mechanism-based module that integrates adaptability resources (CCT), motivational decision processes (SCCT), and dysfunctional thinking correction (CIP) within feasible institutional delivery conditions. Therefore, a formal needs analysis is required to determine which constructs require prioritisation, how they should be sequenced, and what implementation constraints must be designed around before module development. (Sampson et al., 2000; Wang et al., 2024).

Critical integration across theories.

Across theories, the constructs in this module are not treated as parallel outcomes but as linked mechanisms. CCT positions career adaptability as a psychosocial resource that supports coping with transitions and uncertainty (Savickas & Porfeli, 2012). However, adaptability is unlikely to improve through information exposure alone. SCCT specifies the motivational pathway through which students translate exploration into decisions, namely career decision-making self-efficacy that shapes effort and persistence (Lent et al., 1994). CIP complements both by explaining why some students remain “stuck” despite exposure, because dysfunctional career thoughts and disorganised information processing disrupt problem solving and decision execution (Sampson et al., 2000). Taken together, these theories imply that a structured module should combine (i) adaptability-building tasks, (ii) self-efficacy building through guided mastery and feedback, and (iii) cognitive restructuring to reduce dysfunctional thinking, rather than relying on one-off career talks. Evidence from high-school interventions supports this multi-component logic, with structured programmes most consistently improving career adaptability and decision-making outcomes (Wang et al., 2024), and CIP- versus SCCT-based group counselling showing differential effects across adaptability dimensions over time (Wang & Liu, 2022).

Methodology

This study employed a quantitative research design, using a questionnaire as the research instrument. A needs analysis was a key initial step in module development because it aimed to identify critical issues within the field of study (Saedah et al., 2013). In addition, a needs analysis helped to evaluate the need to develop a particular module and to consider the best approaches for addressing existing problems (Mohd Ridhuan & Nurul Rabihah, 2020; Syar Meeze, 2021). This needs analysis was also conducted before producing the module to ensure that the module developed was genuinely needed.

The researcher determined that the respondents for this needs analysis study would be education counsellors or officers serving in pre-university institutions such as matriculation colleges, Form Six colleges, university Form Six centres (UKM/USM), or daily schools that offer Form Six.

Convenience sampling (availability/grab sampling) was used due to the practical constraints of accessing a dispersed professional population across institutions. Convenience sampling is commonly used in formative or exploratory population research when the objective is to generate setting-relevant evidence rather than population-level estimates, although it limits representativeness (Stratton, 2021). To improve relevance to the study purpose, eligibility criteria were applied: respondents had to (i) be currently serving as a counsellor/officer in a pre-university institution and (ii) have responsibilities related to student guidance/career development programmes. Invitations were distributed through accessible institutional/professional contacts, and participation was voluntary.

In this study, a total of 83 education counsellors and officers from pre-university institutions participated. The sample size is adequate for descriptive needs profiling within the participating network, but it is not intended to support broad population inference beyond similar settings. The instrument used was the Module Needs Analysis Questionnaire, adapted from Mohd Izwan (2017) and refined to fit Malaysian pre-university settings. The questionnaire approach was considered an effective method for assessing the need for materials and the study objectives being investigated. This questionnaire was divided into three sections: sample information, perceptions, and the implementation of career development programmes among pre-university students. Items used dichotomous (Yes/No) response options to enable rapid screening of priority

needs and implementation gaps. This format supports prevalence-style interpretation (e.g., proportion endorsing a need) but does not capture intensity. The content validity of a questionnaire was considered high based on expert judgement if the validity coefficient reached 0.70 or higher, or if it yielded at least 70 percent (Tuckman & Waheed, 1981).

Overall, the average CVI for this instrument was 0.90, indicating that the instrument had adequate content validity. Overall, Cronbach's alpha for each dimension was high, recorded at .861, reflecting good internal consistency. These values indicated that the questionnaire was suitable for adaptation because it demonstrated high reliability. Data were analysed using SPSS. Descriptive statistics (frequencies, percentages) were used to prioritise needs and implementation requirements. Given the dichotomous format and convenience sampling, findings are interpreted as indicative of stakeholder perceptions within the sampled context rather than fully generalisable to all Malaysian pre-university institutions.

Findings

The findings of the needs analysis for the development of a career module for pre-university students are divided into four sections: respondents' demographics, general perceptions of career readiness, views on pre-university students, the need for career guidance programmes, the level and impact of student involvement in career programmes, and the need for a structured career programme (Mohd Izwan, 2017). Table 1 presents the respondents' demographic findings.

Table 1: Respondents' Demographic Information

Item	Category	Frequency	Percent
Gender	Male	12	14.46
	Female	71	85.54
Workplace	Matriculation College	25	30.12
	Daily School	51	61.45
	Form Six College	6	7.23
	University Form Six Centre	1	1.20
Position	Education Counsellor	13	15.66
	Officer, Matriculation Division (MOE)	1	1.20
	Assistant Director, Student Affairs	1	1.20
	Lecturer, Matriculation College	10	12.05
	Guidance and Counselling Teacher	19	22.89
	Senior Assistant Teacher	6	7.23
	Form Six Teacher	32	38.55
Highest Education	Officer, State Education Department	1	1.20
	Bachelor's Degree	54	65.06
	Master's Degree	28	33.74
Years of Service	Doctor of Philosophy (PhD)	1	1.20
	Less than 5 years	3	3.61
	6–10 years	3	3.61
	11–15 years	22	26.51
	16–20 years	23	27.72
	More than 20 years	32	38.55

A total of 83 education counsellors, teachers, or officers serving in pre-university institutions participated as respondents in the needs analysis. The data showed a higher percentage of female respondents than male respondents. Most respondents had more than 20 years of service and were based in daily schools, with many serving as Form Six teachers in daily schools that offered Form Six. Overall, most respondents' highest level of education was a bachelor's degree, followed by a master's degree; only a small number held a PhD. This indicated that the respondents had extensive experience in the pre-university education sector.

Table 2: Needs Analysis Findings Based on The Questionnaire

Statement	Response	Percentage
Dimension: General perceptions of career readiness		
Career planning at the pre-university level is important.	Yes / No	100% (n=83) / 0% (n=0)
Pre-university students' career readiness influences their future employability.	Yes / No	100% (n=83) / 0% (n=0)
Structured career guidance is important for pre-university students to improve career readiness.	Yes / No	100% (n=83) / 0% (n=0)
Dimension: Views on pre-university students		
Pre-university students have low awareness of systematic career planning.	Yes / No	100% (n=83) / 0% (n=0)
Pre-university students are not very concerned about career planning.	Yes / No	85.5% (n=71) / 14.5% (n=12)
Pre-university students are less involved in career programmes during their study period.	Yes / No	81.9% (n=68) / 18.1% (n=15)
Pre-university students choose not to participate in career programmes if given the option.	Yes / No	69.1% (n=58) / 30.1% (n=25)
Dimension: Need for career guidance programmes		
Pre-university students need professional guidance in career planning.	Yes / No	100% (n=83) / 0% (n=0)
Career programmes should be implemented based on current pre-university students' needs.	Yes / No	100% (n=83) / 0% (n=0)
Using a structured module for career programmes can address career readiness issues among pre-university students.	Yes / No	97.6% (n=81) / 2.4% (n=2)
Dimension: Level and impact of student involvement in career programmes		
Student participation level in career development programmes organised at your institution.	Yes / No	90.4% (n=75) / 9.6% (n=8)
Impact of the career development programmes on participating students.	Yes / No	94% (n=78) / 6% (n=5)
Career readiness level of students who have attended career development programmes.	Yes / No	94% (n=78) / 6% (n=5)
Career readiness level of students who did not attend career development programmes.	Yes / No	55.4% (n=46) / 44.6% (n=37)
Existing career development programmes help pre-university students' career readiness.	Yes / No	88% (n=73) / 12% (n=10)

Dimension: Need for a structured career programme

Are there any career programmes using a module implemented at your institution?	Yes / No	27.7% (n=18) / 78.3% (n=65)
The career development programme developed should meet current pre-university students' needs.	Yes / No	96.4% (n=80) / 3.6% (n=3)
The career development programme should consider module content that matches the intervention implemented.	Yes / No	96.4% (n=80) / 3.6% (n=3)
Career development module content should be developed based on an appropriate career development theory or model.	Yes / No	97.6% (n=81) / 2.4% (n=2)
In your view, should career development programmes be improved to increase pre-university students' career readiness?	Yes / No	100% (n=83) / 0% (n=0)

Table 2 presents the needs analysis findings for the dimension of general perceptions of career readiness. Overall, all respondents (n = 83) selected 'Yes' for all items in this dimension. Specifically, 100% of the respondents responded 'Yes' that career planning at the pre-university level was important (Yes = 100%, n = 83; No = 0%, n = 0). Likewise, 100% of the respondents responded 'Yes' that pre-university students' career readiness influenced their future employability (Yes = 100%, n = 83; No = 0%, n = 0). In addition, 100% of respondents indicated that structured career guidance was important for improving career readiness among pre-university students (Yes = 100%, n = 83; No = 0%, n = 0). Collectively, these results indicated a strong and consistent consensus among respondents regarding the necessity of career planning and the critical role of structured career guidance in strengthening career readiness at the pre-university level.

Moreover, for the dimension on views of pre-university students, the findings indicated strong agreement that students required greater support to engage in systematic career planning and related programmes. All respondents (n = 83) agreed that pre-university students had low awareness of systematic career planning (Yes = 100%, n = 83; No = 0%, n = 0). In addition, a large majority perceived that students were not very concerned about career planning (Yes = 85.5%, n = 71; No = 14.5%, n = 12). Similarly, most respondents agreed that pre-university students were less involved in career programmes during their study period (Yes = 81.9%, n = 68; No = 18.1%, n = 15). Further, more than two-thirds indicated that students chose not to participate in career programmes when given the option (Yes = 69.1%, n = 58; No = 30.1%, n = 25). Overall, these findings suggest that although career planning is widely recognized as vital, students' limited awareness and relatively low engagement in career-related activities remain key concerns, reinforcing the need for more structured and proactive career guidance interventions at the pre-university level.

Furthermore, for the dimension on the need for career guidance programmes, respondents again reported very strong consensus on the importance of formal and needs-based career support. All respondents (n = 83) agreed that pre-university students need professional guidance in career planning (Yes = 100%, n = 83; No = 0%, n = 0). Similarly, 100% of respondents indicated that career programmes should be implemented based on current pre-university students' needs (Yes = 100%, n = 83; No = 0%, n = 0). In addition, an overwhelming majority responded 'Yes' to the question of whether using a structured module for career programmes can address career readiness issues among pre-university students (Yes = 97.6%, n = 81; No = 2.4%, n = 2). Taken together, these findings highlighted a clear perceived need for professionally delivered,

systematically designed, and needs-driven career guidance programmes, with strong support for a structured module approach as a practical strategy to strengthen career readiness among pre-university students.

Besides, regarding the dimensions of the level and impact of student involvement in career programmes, the results suggested that career development activities were perceived as beneficial, particularly for participating students, although views were more divided when considering students who do not attend such programmes. A large majority of respondents indicated that students participated in career development programmes organised at their institution (Yes = 90.4%, n = 75; No = 9.6%, n = 8). Most respondents responded 'Yes' that these programmes had a positive impact on participating students (Yes = 94.0%, n = 78; No = 6.0%, n = 5). Consistent with this, 94.0% perceived that the career readiness level of students who had attended career development programmes was improved (Yes = 94.0%, n = 78; No = 6.0%, n = 5). However, perceptions were more mixed regarding the career readiness level of students who did not attend career development programmes, with 55.4% responding 'Yes' (n = 46) and 44.6% responding 'No' (n = 37). Finally, 88.0% of respondents agreed that existing career development programmes helped pre-university students' career readiness (Yes = 88.0%, n = 73; No = 12.0%, n = 10). Overall, these findings suggest that while current career development programmes are generally viewed as impactful and supportive of career readiness, maximizing student participation remains important, as perceived readiness outcomes appear stronger among students who engage with the programmes.

Lastly, for the dimension on the need for a structured career programme, the findings indicated a clear gap in current practice and a strong consensus that career programmes should be improved through a theory-driven, needs-based, module format. Only 27.7% of respondents reported that their institution currently implements career programmes using a module (Yes = 27.7%, n = 18), whereas 78.3% indicated that such module-based programmes were not implemented (No = 78.3%, n = 65). Despite this limited implementation, there was strong agreement that the career development programme to be developed should be aligned with current pre-university students' needs (Yes = 96.4%, n = 80; No = 3.6%, n = 3) and should include module content that matched the intervention implemented (Yes = 96.4%, n = 80; No = 3.6%, n = 3). Respondents also strongly endorsed grounding the module content in an appropriate career development theory or model (Yes = 97.6%, n = 81; No = 2.4%, n = 2). Finally, all respondents agreed that career development programmes should be improved to increase pre-university students' career readiness (Yes = 100%, n = 83; No = 0%, n = 0). Overall, these results highlight both an institutional shortfall in module-based delivery and an unequivocal stakeholder mandate for developing a structured, theory-informed, and needs-responsive career guidance module to strengthen career readiness among pre-university students.

Discussion

The needs analysis findings indicate a strong consensus among pre-university counsellors and officers that career planning at the pre-university level is pivotal and requires structured guidance. However, the findings also reveal a substantial implementation gap, as only a small proportion of institutions reported having module-based career development programmes. This suggests that the central issue is not merely awareness of the importance of career guidance, but rather the absence of a standardised, consistent, and scalable approach that can be implemented across diverse institutional contexts.

Respondents' perceptions that students demonstrate low awareness of career planning and inconsistent participation in career programmes further imply that ad hoc approaches, such as occasional talks, are unlikely to be sufficient for developing career decision-making competence. School-based intervention literature indicates that effective programmes are typically delivered through a structured series of sessions, providing repeated practice, guided self-reflection, and feedback that strengthen decision-making skills (Wang et al., 2024). Within a theoretical framework, the present findings support the selection of practical target constructs for the module, namely career adaptability, career maturity, and dysfunctional career thinking. Career adaptability is relevant because it represents a psychosocial resource for coping with uncertainty in educational and work pathways (Savickas & Porfeli, 2012). The CIP approach further posits that negative cognitions and disorganised processing of career information can undermine decision-making, thus justifying psychoeducational components that restructure maladaptive thinking (Sampson et al., 2000). SCCT also reinforces the need to build career decision-making self-efficacy, given that efficacy beliefs shape choice behaviour, effort, and persistence during the process of selecting a field of study (Lent et al., 1994).

Nevertheless, the proposed module should be conceptualised as an institution-level intervention to strengthen decision readiness, rather than as a direct solution to youth unemployment, as employment outcomes are also shaped by labour market structures and macroeconomic conditions (Bahagian Perancangan dan Penyelidikan Dasar Pendidikan, 2024). Accordingly, effectiveness evaluation should prioritise more realistic proximal outcomes such as improved choice clarity, decision-making self-efficacy, and career adaptability (Rudolph et al., 2017). From an implementation perspective, the observed tendency for students to opt out when participation is optional indicates that the module should incorporate explicit engagement strategies, supported by feasible scheduling and adequate facilitator training. Finally, while convenience sampling limits the generalisability of the findings, the consistency of agreement across key dimensions provides a reasonable basis to proceed with the development of a locally responsive module (Stratton, 2021).

Conclusion

The findings indicate unanimous agreement among counsellors and education officers that structured career guidance is needed, yet students remain low in awareness and engagement, and most institutions have not adopted module-based programmes. Future work should therefore develop a module with sound validity by conducting content validation through an expert panel and revising the module based on their feedback. The module should then be piloted on a small scale in real pre-university settings to test for feasibility, timing, clarity of activities, and student acceptance. Finally, studies should empirically verify reliability, such as internal consistency and score stability, where relevant, before wider rollout.

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