Wordcount :12642 (Appendix excluded)

Why do(n't) students attend developmental language courses?

An application of the Theory of Planned Behavior

Abstract

Worldwide, higher education institutions enroll increasingly heterogeneous student cohorts with diverse academic backgrounds and entry qualifications, many of whom are underprepared for university demands. In this context, developmental programs play a crucial role in promoting inclusivity by helping students reach prerequisite levels. This is particularly true for developmental language courses supporting essential linguistic skills for academic success. Yet, when these courses are optional, low attendance substantially limits their capacity to contribute to educational equity.

This study applies the Theory of Planned Behavior, a widely recognized model from social psychology developed by Icek Ajzen, to identify determinants of students' intention to attend optional developmental language courses. The literature review identifies barriers and facilitators aligning with TPB constructs. A belief-elicitation pilot study reveals contextually relevant beliefs converging with international research across four continents, supporting the framework's generalizability.

Hierarchical regression analyses confirmed TPB's exceptional explanatory power: core determinants explained 68% of course attendance intention variance, exceeding social science benchmarks and validating the model for studying developmental course attendance. Perceived benefits emerged as the strongest determinant of attendance intention, particularly the expectation that the course would enhance academic skills rather than merely linguistic skills. Students' perceived capacity to attend, largely shaped by the course schedule, also contributed independently. Social influences, such as peers' attendance, further affected attendance intention. The anticipated experiential benefits, and more specifically the expectation of feeling supported, exerted a marginal effect. Based on these findings, and with due consideration of their generalizability, practical interventions to improve attendance in developmental language courses are proposed.

Keywords

Theory of planned behavior – Developmental courses – Student engagement – Language proficiency – Underprepared students

1. Introduction

The transition to higher education (HE) poses substantial challenges for many students (Kift, 2015). As institutions enroll increasingly heterogeneous cohorts with diverse academic backgrounds and qualifications (Phillips, 2019), and since many high school graduates—two-thirds of U.S. public high school graduates (Greene & Forster, 2003)—are underprepared for HE, institutions have expanded support initiatives (Johnson et al., 2022). Remedial programs stand out among these, targeting a large proportion of students (approximately 60% of U.S. students in 2016) at considerable financial cost (Bettinger et al., 2013; Jimenez et al., 2016).

A widespread concern is students' proficiency in the language of instruction. Accordingly, HE institutions offer a range of programs, either mandatory or optional, designed to strengthen students' academic language skills. Mandatory developmental courses, traditionally taken before students could access credit-bearing coursework, have demonstrated substantial limitations (Rose, 2012). Yet optional support programs offered alongside regular coursework face a critical challenge: lower than expected participation rates may prevent them from reaching the students who could benefit most from this support, thereby limiting their potential contribution to fostering academic inclusion – caution is warranted, as evidence of their positive impact (e.g., Bettinger & Long, 2009) does not imply that these programs benefit all students equally (see Bettinger et al., 2013). Although several factors have been proposed to explain students' low attendance, their relative importance when considered simultaneously remains unclear. The present study examines a range of potential barriers and facilitators shaping students' intention to attend an optional, non-credit-bearing language support course, with the aim of identifying those that play a key role and therefore represent the most promising targets for interventions designed to increase participation. To this end, we draw on a widely used theoretical framework for identifying the antecedents of voluntary behaviors: the Theory of Planned Behavior (Ajzen, 1991).

1.1 Language-of-instruction proficiency and developmental support initiatives

Language skills—reading, writing, and oral expression—are fundamental to HE (Garrett et al., 2017; Talwar et al., 2023), underpinning most academic activities such as reading texts, listening to lectures, note-taking, summarizing, exams, reports, and presentations. This issue affects not only non-native speakers—for whom proficiency is closely associated with academic success (e.g., Ghenghesh, 2015; Izatullah et al., 2022)—but also native speakers (Li & Wang, 2026; Yu et al., 2025). The importance of these competencies varies across disciplines (Barkaoui, 2025), but they are consistently associated with academic success (Barbera et al., 2020; Hewagallage et al., 2022), with students' initial written proficiency playing a particularly critical role in academic adjustment (Trautwein & Bosse, 2017) and achievement (Garrett et al., 2017; Talwar et al., 2023). Accordingly, many institutions offer developmental language courses or programs for students who need to strengthen these competencies. The term "developmental" is increasingly preferred to "remedial" because it emphasizes competency development rather than deficit correction (Ganga et al., 2018), although the term "remedial" remains commonly used in the literature and in institutional practice.

In the United States, twenty-five years ago, 75% of postsecondary institutions offered remedial English courses for 28% of freshmen lacking college-level skills (Parsad, 2003). In this country, many institutions, particularly community colleges, have traditionally assessed students' academic preparedness upon entry into HE. Students whose placement test results suggested insufficient academic preparedness were required to complete developmental courses before enrolling in credit-bearing gateway courses (Rose, 2012). However, the effectiveness of this traditional remediation model has increasingly been questioned (MacArthur, 2023; Rose, 2012). According to the report *Remediation: Higher Education's Bridge to Nowhere* (Complete College America, 2012), the model itself has become a

structural barrier to student success, leading the authors to recommend replacing prerequisite remedial sequences with college-level courses incorporating co-requisite academic support. Since then, many HE institutions have moved away from the traditional model toward models in which students receive academic assistance while taking credit-bearing courses, with mandatory participation varying across institutions and states. Nevertheless, when participation is optional, many underprepared students do not participate in these support programs (Park et al., 2016; Woods et al., 2019). In Canada and several European countries (e.g., France, UK, Germany, Belgium), where language remediation often relies on voluntary rather than mandatory participation (Devos et al., 2024; Faye et al., 2024; Hoffmann & Freise, 2024; Lafontaine et al., 2015; Li & Wang, 2026; Malone et al., 2020; Massart et al., 2019; Neilson & King, 2023;), uptake remains low as well (e.g., Demanet, 2024; Massart et al., 2019; Yeats et al, 2010). This limited uptake highlights the need to better understand the determinants of students' engagement with support programs in general, and with developmental programs and language courses in particular.

1.2 Understanding student engagement in support programs: From general to specific

According to Plumat et al. (2012), students' misconceptions about HE and their own competencies hinder engagement in support programs in general. As pointed out by Li et al. (2023), the first step is indeed for students to become aware that they need help, which is not always the case. Optimal scheduling, clear information, and proximal benefits ("dangling the carrot") enhance participation (Almaghaslah &Alsayari, 2022; Plumat et al., 2012). Program names (e.g., "support" vs. "remedial") also matter, as they risk stigmatizing students (Plumat et al., 2012). Social influences also play a role: peer influence encourages engagement (Weuffen et al., 2021), as do social norms for general (Bornschlegl et al., 2020) and academic help-seeking (Thomas & Tagler, 2019). Sharing similar difficulties with close peers may also foster participation, as students tend to seek help from these peers first and are more likely to

seek support when they perceive that their difficulties are shared by others (Li et al., 2023). Bornschlegl et al.'s scoping review of 168 studies highlights attitudes predict general help-seeking, and that context-specific factors impact academic help-seeking (Bornschlegl et al., 2020).

With regard to developmental courses, Al-Zahrani (2023) identified diagnostic assessment and intrinsic motivation as important predictors of students' engagement. Schwartz (2017) suggested that a fixed mindset can lead students to perceive these courses as useless, viewing their deficiencies as unchangeable. This perceived uselessness may also stem from developmental courses' emphasis on general skills rather than directly applicable course content (Li & Wang, 2026). Park et al. (2016) found that many students fail to recognize the potential benefits of developmental courses and prefer to enroll directly in college-level courses. Developmental courses are also associated with negative stereotypes (Schwartz, 2017) and can induce fear of negative judgment from instructors (Li & Wang, 2026), which may reduce attendance. This aligns with evidence of self-stigma in help-seeking: underprepared students may experience negative self-judgments and fears of others' evaluations triggered by the prospect of seeking academic help (Koch et al., 2012; Winograd & Rust, 2014).

With regard specifically to language remediation courses, Lobo and Gurney (2014) highlighted the role of students' expectations in shaping satisfaction, academic performance, attendance, and persistence. In their study of English courses for international undergraduates, students expected learning outcomes such as improved macro-skills and academic competencies, as well as interactive methods with practical, individualized teacher support. Crétin et al. (2022) noted that a French developmental written communication course for incoming students faced legitimacy issues among students and instructors. Echoing Plumat et al. (2012), they stressed the role of course titles. "French" evokes prior schooling and

mechanics (spelling, grammar), while "communication" courses seem professionalizing—which boosts engagement (Peteranetz et al., 2018). Situated learning further enhances positive perceptions (Lave & Wenger, 1991; Sadler, 2009): language revision courses seem like extra work, but students find discipline-related texts stimulating, recognizing their relevance for academic success and professional integration.

The reviewed studies highlight diverse factors, each of which may influence students' attendance at developmental language courses. As we will discuss in addressing the research questions, we contend that, collectively, these factors align well with the Theory of Planned Behavior (TPB, Ajzen, 1991). This widely recognized model from social psychology was developed to explain the psychological processes underlying the formation of behavioral intentions and the enactment of voluntary behaviors across a wide range of domains. Its extensive application has helped clarify the relative contribution of different determinants to intentions and behaviors, while identifying promising targets for interventions aimed at promoting desirable behaviors.

1.3 Towards an integrative conceptual framework and targeted interventions

Ajzen's TPB (1991) posits that the direct antecedent of deliberate behavior is intention. Intention is shaped by three core determinants: attitude, subjective norm, and perceived behavioral control (PBC). *Attitude* refers to the perceived value of performing the behavior and encompasses *instrumental attitude* about expected outcomes, as well as *experiential attitude* about expected feelings. *Subjective norm* includes *descriptive norm* that concerns the prevalence among others and *injunctive norm* that concerns social approval. *PBC* reflects perceived easiness to perform the behavior and encompasses perceived *ability* and *autonomy*. Because it reflects the *actual control* one has over the behavior, PBC also influences whether intention is translated into action. These determinants arise from underlying beliefs with their *strength* reflecting salience or subjective probability and their

power reflecting evaluative importance or influence. Because beliefs vary by context and individual, the TPB is assumed to capture situational and individual influences at this level without requiring model extensions.

The TPB serves as a robust framework for any planned behavior, population, or context. In educational sciences, the model has been applied to a wide range of behaviors, including those of teachers (e.g., Huart et al., 2022; Virat et al., 2025), supervisors (e.g., De Jonge et al., 2020; Walker & Gonsier-Gerdin, 2023), and students (e.g., Huart et al., 2023; Roland et al., 2018). Though sometimes criticized (Sniehotta et al., 2014)—with rebuttals in response (Ajzen, 2015; Armitage, 2015)—its enduring success stems from its impressive predictive power. Armitage and Conner's (2001) meta-analysis of 185 studies showed attitude, norm, and PBC explaining 39% of intention variance and 27% of behavior, with attitude strongest, followed by PBC and, ultimately, social subjective norm, a finding that has been corroborated by McEachan et al. (2011).

Applied to our subject and as illustrated in Figure 1, the TPB posits that the more students perceive attending a developmental language course as beneficial (instrumental attitude) and enjoyable (experiential attitude), that many valued people will attend (descriptive norm) and expect them to do so (injunctive norm), and that they are capable and autonomous in attending (PBC-ability, -autonomy), the stronger their intention to attend, and consequently, their attendance. These intention determinants rely on beliefs, which vary by context and individual. To our knowledge, no previous study has applied the TPB to explain students' intention to attend an optional developmental language course. It is precisely this gap that the present study seeks to address.

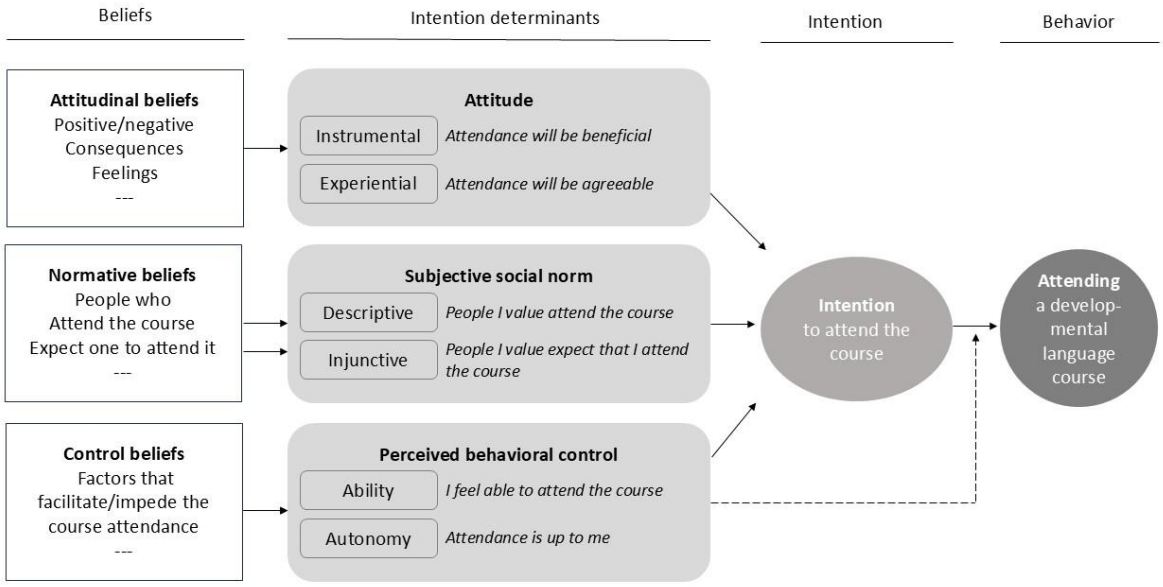


Fig. 1

The TPB applied to student attendance at a developmental language course

1.4 Research questions and hypotheses

The first research question investigated in this study was: *Do the intention determinants proposed by the TPB predict students' intention to attend an optional developmental language course?* We expected this to be the case for two reasons. First, the factors reviewed earlier align with TPB constructs. Indeed, outcome expectations—such as proximal benefits (Plumat et al., 2012), professional relevance (Crétin et al., 2022), or academic/language skills (Lobo & Gurney, 2014) correspond to beliefs underlying one's perception that attending the courses would be beneficial—the *instrumental attitude*. Thinking that attendance could impact self-esteem (Koch et al., 2012; Li & Wang, 2026; Winograd & Rust, 2014) represents another belief likely to influence anticipated feelings—the *experiential attitude*. Peer influence (Li et al., 2023; Thomas & Tagler, 2019; Weuffen et al., 2021) and stigma fears (Koch et al., 2012; Plumat et al., 2012; Winograd & Rust, 2014) highlight the role of others' behaviors and expectations—the *descriptive and injunctive norms*. Competency perceptions (Plumat et al., 2012) and diagnostic scores (Al-Zahrani, 2023) are prone to affect students' perceived need for help (Li et al., 2023) as well as their self-efficacy—the *PBC*-

ability, while organizational factors such as timeliness (Almaghaslah &Alsayari, 2022; Plumat et al., 2012) are known to influence one's sense of *autonomy* (e.g., timetable conflicts). Finally, task/content beliefs (Li & Wang, 2026; Lobo & Gurney, 2014), pedagogical approaches (Lobo & Gurney, 2014; Sadler, 2009), course labels (Crétin et al., 2022), and communication (Plumat et al., 2012) may be perceived as limiting or facilitating, similarly to *PBC beliefs*.

Second, the TPB has explained attendance in other support programs: Bornschlegl et al. (2020) used the TPB to structure their review of 168 studies on student engagement in various support programs, and Huart et al. (2023) found that TPB determinants explained 54% of the variance in students' intention to take part in an optional faculty-mentoring program. Accordingly, a first hypothesis (H1) stated that the TPB determinants would substantially predict students' intention to attend an optional developmental language course. A second hypothesis (H2) was that attitude would be the strongest predictor of this intention, followed by PBC and ultimately subjective norm, reflecting the relative contribution of these determinants reported in previous meta-analyses (Armitage & Conner, 2001; McEachan et al., 2011).

The second research question investigated in this study was: *Which beliefs play a key role in shaping these determinants?* This question is particularly important because the identification of specific beliefs is what guides the design of interventions aimed at promoting the adoption of desirable behaviors (von Haeften et al., 2001). For instance, when examining attendance at various academic activities, Skoglund et al. (2020) showed that students' beliefs that lectures included interactive exercises with relevant applications and pop quizzes were facilitators, whereas the belief that attending lectures required long commutes represented a barrier. Huart et al. (2023) demonstrated the positive role of the specific attitudinal belief that a mentoring program would enhance students' self-esteem and the inhibiting role of the PBC-

belief that shyness could hinder the development of mentoring relationships in explaining attendance at the aforementioned non-compulsory mentoring program. Huart et al. (2025) identified the specific attitudinal belief that attending exam preparation seminars organized on Saturdays would reduce contact with loved ones as a barrier to attendance. In all cases, identifying these specific beliefs led to the development of targeted and context-specific intervention proposals.

In the case of attendance at developmental language courses, each of the factors identified in the literature review and discussed above represents a potential candidate. However, because these factors have generally been examined independently of one another, it is difficult to formulate hypotheses regarding which of them would emerge as the most important ones when considered simultaneously. Nevertheless, previous TPB research aimed at identifying intervention targets (e.g., Hamilton & Schmidt, 2013; von Haeften et al., 2001) and the TPB methodology described below – which involves eliciting salient beliefs in a pilot study and examining their relative contribution in the main study – allow for the formulation of a third hypothesis: although most, if not all, of the factors identified above may also emerge among the beliefs associated with attending an optional developmental language course, only a limited number of them are expected to make a unique contribution once the influence of the other beliefs is taken into account.

2. Method

2.1 Research design

The study was preceded by a pilot study conducted in accordance with Ajzen's (2006) recommendations for belief elicitation. The pilot involved a small subsample of the target population, consistent with Ajzen's recommendation that approximately 25-30 participants are generally sufficient to identify the most salient beliefs[1]. The findings informed the

[1] https://people.umass.edu/aizen/faq.html

development of the questionnaire, with the belief-based items being derived primarily from participants' elicited responses.

The main study employed a questionnaire-based, pooled cross-sectional design. Consistent with the TPB, the questionnaire was administered *before* students had the opportunity to engage in the target behavior. The same questionnaire was administered to two independent cohorts during the 2022–2023 and 2023–2024 academic years, before the start of the remediation course. Following a change in the course schedule, the remediation course was offered after the January examination session in the first cohort and moved to the first semester in the second cohort.

2.2 Participants

Participants were first-year students in the Faculty of Philosophy and Letters at the University of Liège (Belgium). They were invited to complete an online questionnaire via flyers placed in key faculty locations, such as the cafeteria and lecture halls. Data collection occurred before the developmental language course began, across two academic years: first at the start of the second semester, then at the beginning of the first semester the following year. Participation was voluntary, and no question was compulsory.

This study was conducted in accordance with the Declaration of Helsinki. Of the 143 students who provided informed consent, 120 reached the end of the questionnaire. Among those who reported their gender, 71% were women and 29% were men. Ages ranged from 17 to 65 years (M = 19.1, SD = 5.38). The maximum age is an outlier (median = 18).

2.3 The context of the study: the developmental language course of the Faculty of Philosophy and Letters at the University of Liège

Recognizing the well-documented importance of entry-level language skills for academic success in its disciplines (Barkaoui, 2025), the Faculty of Philosophy and Letters at the University of Liège offers a voluntary, noncredit developmental language course called

Reinforcement of Language Skills. Open to all first-year students, it focuses on strengthening analytical, structural, argumentative, and writing skills. The course was originally scheduled for the second semester and targeted students who had failed exams at the end of the first semester. From the following academic year onward, it moved to the first semester to enable earlier remediation.

2.4 Procedure

2.4.1 Pilot study

We followed Ajzen's (2006, 2020) recommendations for TPB studies. These involve a series of steps and tailoring items to the specific target behavior. We first defined the behavior as "attending the Reinforcement of Language Skills course during the semester". Next, we conducted a qualitative pilot elicitation study to identify contextually relevant beliefs underlying the TPB determinants. An initial sample of 26 first-year students recruited from different departments within the faculty completed an online questionnaire in which they were asked to consider attending the course and list: 1) its perceived advantages and disadvantages, as well as the associated feelings (attitudinal beliefs); 2) the people most and least likely to attend the course and to approve of attendance (normative beliefs); and 3) the factors that would facilitate or hinder attendance (PBC beliefs). The open-ended responses were subjected to an inductive thematic content analysis conducted by one author to identify salient beliefs. Two additional authors subsequently reviewed the coding and categorization of the responses, and any discrepancies were discussed until consensus was reached. In accordance with Ajzen's recommendations for belief elicitation studies, the pilot sample size was considered sufficient to identify the salient beliefs of the target population. Moreover, the responses provided by the last participants did not reveal any new salient beliefs beyond those already identified. Given the exploratory nature of the pilot, we retained all beliefs mentioned by this subsample, including those mentioned by only a few participants (see Table 1).

Table 1

Contextually relevant beliefs concerning attendance at the developmental language course

Attitudinal beliefs: *Attending the course will result in…*	
Bridging gaps in knowledge/skills	
Better understanding lecturers' expectations	
Improving analytical, structuring, argumentative and writing skills	
More effective academic skills overall	
Pleasure from making progress	
Stronger motivation and determination	
Greater belief in one's chances of success	
Feeling supported	
Wasted time	
Less time for other courses	
Less time for other life areas	
Fatigue	
Boredom	
Increased stress or anxiety	
Feeling inferior	
Lacking university-level academic requirements	
Showing professors one's efforts to improve	
Subjective norm beliefs:	
Descriptive beliefs: Those who are most/least likely to attend are…	*Injunctive beliefs: Those who are most/least likely to hold expectations regarding students' attendance are…*
Students who want to learn more	Parents
Studious, hardworking students	Friends
Struggling or failing students	Other students
Students lacking self-confidence	Faculty
Students missing prerequisites	
Students worried about success	
PBC beliefs: *Factors facilitating/hindering attendance are…*	
Perceiving the course as useless	
Busy schedule (classes, leisure)	
Fixed class times	
Extra commuting	
Enjoyable format (e.g., group work, competitions…)	
Detailed program online	
Links to other courses/curriculum	
Personalized approach	
Friendly, welcoming atmosphere	
Time-consuming part-time job	
Evening scheduling	
Procrastination tendency	
Confidence in success	
Already competent in analysis, structuring, argumentation, and writing	

2.4.2 Constructing the TPB questionnaire

Third, we developed a questionnaire to measure students' intention to attend the developmental language course, its TPB determinants, and their underlying beliefs. All items used 1–7 Likert scales. Pairs of items adapted from Ajzen (2006) assessed intention ("I intend to/I will attend the course during the semester"), instrumental attitude ("Attending the course during the semester will be useful/beneficial"), experiential attitude ("Attending the course during the semester will be pleasant/agreeable"), descriptive norm ("People I value/Most students like me will attend the course during the semester"), injunctive norm ("People who are important to me expect//I am expected to attend the course during the semester"), PBC-ability ("I feel capable of/I can handle attending the course during the semester"), and PBC-autonomy ("I am the one who decides whether to attend the course during the semester/attending the course during the semester is up to me").

Following Ajzen (2006), we measured each belief from Table 1 using pairs of items measuring its strength and power (7-point scales). For attitudinal beliefs: "Attending the course during the semester will result in [outcome]" and "[Outcome] is a good thing." For descriptive norms: "[Normative referent] are likely to attend the course" and "I would like to be like [normative referent] in this respect." For injunctive norms: "[Injunctive referent] expects me to attend the course" and "[Injunctive referent]' opinions are very important to me." For PBC beliefs: "[Inhibitor/facilitator] complicates/facilitates attendance" and "[Inhibitor/facilitator] is very true/probable". We did not record actual attendance: the faculty does not monitor it, and doing so could discourage participation.

2.5 Data Analysis

We conducted analyses using Jamovi software. Missing data were handled using an analysis-by-analysis complete-case approach. For each analysis, only participants with complete data on all variables included in that specific analysis were retained. Consequently,

sample sizes may vary across analyses. For computed variables, scores were calculated only when all constituent items were available.

2.5.1 Preliminary Analyses

Before creating the "intention to attend the developmental language course" variable, we examined the association between its two items. The Pearson correlation was significant ($r(118) = .94$, $p < .001$), so responses were combined by computing their means.

Few studies distinguish between the two components of each intention determinant, so we ran confirmatory factor analyses (CFAs) using maximum likelihood estimation to test whether items loaded on separate factors for each component (e.g., instrumental vs. experiential attitude) or a single factor (e.g., all attitude items combined). The two-facet-per-determinant model fit well ($CFI = 0.99$, $TLI = 0.98$, $RMSEA = 0.04$, $\chi^2(39) = 48.1$, $p = .151$), unlike the single-factor model ($CFI = 0.60$, $TLI = 0.39$, $RMSEA = 0.25$, $\chi^2(51) = 440$, $p < .001$). We thus created separate variables—"instrumental attitude," "experiential attitude," "descriptive norm," "injunctive norm," "PBC-ability," and "PBC-autonomy"—by averaging their respective items.

Following Fishbein and Ajzen's (1975) expectancy-value model, we formed belief variables by multiplying each belief's strength by its corresponding power, as recommended by Ajzen (1991, 2006). Per La Barbera and Ajzen (2020), the strength of beliefs about disadvantages, non-attending/unapproving referents, and impeding factors was reverse-coded.

2.5.2 Model testing

To identify incentives and barriers to attending the developmental language course, we followed a two-step strategy from prior TPB studies (Huart et al., 2022, 2025; La Barbera & Ajzen, 2020). Step 1 identified significant TPB determinants of intention. Step 2 determined which beliefs predicted those determinants. Given the pooled cross-sectional design of the study and to test for an effect of the year/semester of participation, we first conducted a

hierarchical regression analysis with three successive models: (1) year/semester of course organization, (2) TPB determinants (instrumental/experiential attitudes, descriptive/injunctive norms, PBC-ability/autonomy), and (3) year/semester × determinant interaction terms. Next, we regressed each significant determinant on its corresponding beliefs. Following La Barbera and Ajzen (2020), we excluded non-significant determinants, except one nearing significance. We retained it due to its strong correlation with its paired facet (which would make it significant alone) and La Barbera and Ajzen's (2024) findings on its value for understanding underlying processes.

The number of attitudinal and PBC beliefs elicited during the pilot study was large relative to the number of participants that could be recruited for the main study during the short period of time between the beginning of the semester and the beginning of the course (leaving insufficient time for multiple reminders). A G*Power analysis, using $f^2 = .15$ (medium effect), $\alpha = .05$, and power = .80, as recommended by Cohen (1992), indicated a maximum of nine independent variables for a sample size of $N = 114$, corresponding to the smallest sample available across the regression analyses. Therefore, following the analytic strategy for TPB studies proposed by von Haeften et al. (2001) and adopted in many studies (e.g., Côté et al., 2012; Hamilton et al., 2016a, 2016b; Hamilton & Schmidt, 2013; Huart et al., 2023), only beliefs that were significantly correlated with the intention to attend the course (see Tables A1, A2, A3 in the Appendix) were included in the regression analyses. As a result, the number of beliefs included as predictors never exceeded nine.

As von Haeften et al. (2001) note, belief intercorrelations limit how many emerge significant, marking them as *critical* intervention targets. They recommend identifying additional promising *alternative targets*, i.e. beliefs associated with the critical ones that are likely to be changed alongside them through an intervention or that may serve as worthwhile intervention targets when the critical beliefs cannot be targeted directly or when reinforcing

the intervention is desirable. As an alternative to the thematic analysis approach proposed by von Haeften et al. (2001), which necessarily involves a degree of subjective judgement, beliefs that were significantly correlated with the critical targets were retained as promising alternative intervention targets when only a limited number of intercorrelations were observed. When numerous intercorrelations were present, a hierarchical cluster analysis was conducted to refine the identification of alternative intervention targets. Specifically, the analysis aimed to identify the beliefs located closest to the critical targets within the overall structure of participants' belief patterns. Hierarchical clustering was performed on the belief variables using Euclidean distance and Ward's D2 linkage method. The resulting dendrogram was then inspected to determine which beliefs clustered most closely with a critical target and could therefore be retained as alternative intervention targets. This procedure was preferred over a more conventional exploratory factor analysis because the objective was not to identify latent psychometric dimensions underlying the beliefs, but rather to identify beliefs that are likely to be modified together through an intervention. Furthermore, not all beliefs were expected to be associated with other ones. This approach yielded a more fine-grained identification of potential alternative intervention targets while remaining consistent with the overall pattern observed in an exploratory factor analysis (see Table A6 in the Appendix).

2.5.3 Data availability

The dataset and command file are available from the corresponding author upon reasonable request.

3. Results

3.1 Determinants of students' intention to attend the developmental language course

Descriptive statistics are shown in Table 2.

Table 2

Descriptive statistics

Variables	*N*	*M*	*SD*
Intention	120	4.07	1.82
Instrumental attitude	120	4.87	1.59
Experiential attitude	120	3.96	1.31
Descriptive norm	120	3.62	1.13
Injunctive norm	120	4.10	2.05
PBC-ability	120	4.67	1.55
PBC-autonomy	120	5.39	1.82

The first hierarchical regression model was non-significant ($R^2 = .002$, $F < 1$), showing no effect of course year/semester on students' intention to attend the developmental language course. The second model—which added TPB determinants—explained 68% of the variance in intention (adjusted-$R^2 = .677$, $F(7,112) = 36.67$, $p < .001$). As shown in Table 3, in decreasing order of contribution (see betas), instrumental attitude, PBC-ability and descriptive norm each made independent contributions. In other words, attendance intention depended on students viewing the course as beneficial, feeling capable of attending and expecting valuable others to attend. The third model did not explain additional variance ($\Delta R^2 = .019$, $F(6,106) = 1.16$, $p = .331$). Yet experiential attitude showed a trend toward significance—suggesting students' anticipated experience may also play a secondary role.

Table 3

Results of hierarchical regression analysis

	b	***ES***	***t***	***P***
Model 1				
Intercept	4.14	0.24	17.013	< .001
Semester	-0.14	0.333	-0.428	0.669
Model 2				
Intercept	-1.73	0.56	-3.06	0.003
Semester	-0.36	0.24	-1.49	0.139
Instrumental attitude	0.57	0.08	7.51	< .001
Experiential attitude	0.15	0.09	1.65	0.101
Descriptive norm	0.19	0.09	2.12	0.036
Injunctive norm	0.09	0.06	1.45	0.150
PBC-ability	0.41	0.07	5.62	< .001
PBC-autonomy	-0.06	0.06	-1.10	0.272
Model 3				
Intercept	-1.17	0.89	-1.32	0.190
Semester	-0.74	1.23	-0.60	0.553

Instrumental attitude	0.59	0.13	4.55	< .001
Experiential attitude	0.25	0.13	1.83	0.070
Descriptive norm	0.06	0.13	0.47	0.636
Injunctive norm	0.12	0.09	1.43	0.157
PBC-ability	0.32	0.10	3.21	0.002
PBC-autonomy	-0.10	0.10	-1.08	0.284
Instrumental attitude x Semester	-0.03	0.17	-0.16	0.876
Experiential attitude x Semester	-0.18	0.19	-0.93	0.354
Descriptive norm x Semester	0.25	0.19	1.32	0.191
Injunctive norm x Semester	-0.18	0.13	-1.37	0.174
PBC-ability x Semester	0.25	0.19	1.35	0.181
PBC-autonomy x Semester	-0.01	0.14	-0.03	0.975

3.2 Underlying Beliefs

3.2.1 Attitudinal beliefs

Table A1 in the Appendix presents the correlations between intention and attitudinal beliefs, as well as among the attitudinal beliefs themselves. Nine beliefs were significantly correlated with intention. These beliefs corresponded to the expectation that attending the course would result in:

- bridging gaps in knowledge/skills ($r = 0.23$, $p = 0.013$),
- better understanding lecturers' expectations ($r = 0.19$, $p = 0.033$),
- improving analytical, structuring, argumentative and writing skills ($r = .24$, $p = 0.009$),
- more effective academic skills overall ($r = 0.30$, $p < .001$),
- pleasure from making progress ($r = .28$, $p = 0.002$),
- stronger motivation and determination ($r = 0.27$, $p = 0.003$),
- greater belief in one's chances of success ($r = .32$, $p < .001$),
- feeling supported ($r = .22$, $p = 0.018$)
- less time for other courses ($r = 0.19$, $p = 0.041$).

These beliefs were subsequently entered as predictors in regression analyses explaining instrumental attitude and experiential attitude. Although the beliefs were correlated with one

another (see Table A1), collinearity diagnostics indicated no problematic multicollinearity (all VIF < 3 and tolerance > .30, see Table A4). These results suggest that the beliefs provided sufficiently distinct contributions to the regression models.

Results from the first regression analysis showed that these beliefs were significantly associated with *instrumental attitude* and accounted for 24% of its variance, $F(9,106) = 4.99$, $p < .001$, adjusted $R^2 = .238$). As shown in Table 4, one belief made a unique contribution to the explanation of instrumental attitude beyond the other beliefs: the belief that attending the course will result in more effective overall academic skills ($b = 0.05$, $t(106) = 2.71$, $p = .008$).

Table 4

Regression of instrumental attitude on attitudinal beliefs

			95% CI				
Belief about	***b***	***SE***	**Low**	**Up**	**β**	***t***	***p***
Intercept	1.23	0.63	-0.02	2.47		1.957	0.053
Bridging gaps	0.02	0.02	-0.01	0.06	0.16	1.508	0.134
Lecturers' expectations	0.02	0.01	-0.01	0.05	0.14	1.474	0.143
Language skills	-0.02	0.02	-0.05	0.01	-0.13	-1.215	0.227
Academic skills	0.05	0.02	0.01	0.09	0.34	2.712	0.008
Pleasure of progressing	0.01	0.02	-0.02	0.05	0.09	0.701	0.485
Motivation determination	-0.01	0.02	-0.05	0.02	-0.08	-0.635	0.527
Belief in success	0.02	0.02	-0.02	0.05	0.12	0.980	0.329
Feeling supported	0.00	0.02	-0.03	0.04	0.04	0.310	0.757
Less time for other courses	0.05	0.03	-0.02	0.11	0.14	1.578	0.117

Results from the second regression analysis showed that these beliefs were also significantly associated with *experiential attitude* and accounted for 23% of its variance ($F(9,106) = 4.87$, $p < .001$, adjusted $R^2 = .232$). As shown in Table 5, one belief made a unique contribution to the explanation of experiential attitude beyond the other predictors: the belief that attending the course will result in feeling supported ($b = 0.03$, $t(106) = 2.33$, $p = .022$).

Table 5

Regression of experiential attitude on attitudinal beliefs

			95% CI				
Belief about	***b***	***SE***	**Low**	**Up**	**β**	***t***	***p***
Intercept	1.62	0.51	0.60	2.64		3.16	0.002

Bridging gaps	-0.01	0.01	-0.03	0.02	-0.04	-0.40	0.691
Lecturers' expectations	0.00	0.01	-0.03	0.02	-0.01	-0.12	0.901
Language skills	-0.01	0.01	-0.04	0.01	-0.12	-1.04	0.299
Academic skills	0.03	0.01	0.00	0.06	0.25	1.97	0.052
Pleasure of progressing	0.00	0.01	-0.03	0.03	-0.03	-0.22	0.828
Motivation determination	0.00	0.01	-0.03	0.03	0.00	0.02	0.980
Belief in success	0.03	0.01	-0.01	0.06	0.23	1.88	0.063
Feeling supported	0.03	0.01	0.01	0.06	0.28	2.33	0.022
Less time for other courses	0.03	0.03	-0.02	0.09	0.11	1.28	0.202

3.2.2 Normative beliefs

Table A2 in the Appendix presents the correlations between intention and descriptive normative beliefs, as well as among the beliefs themselves. Two beliefs were significantly correlated with intention. These were the beliefs that the students most likely to attend the course are students who want to learn more (r = .276, p = .002) and studious, hardworking students (r = .250, p = .006). These normative beliefs did not predict descriptive norm ($F(2,117) = 0.33$, p = .722, adjusted R^2 = -.011, see Table 6).

Table 6

Regression of descriptive norm on descriptive normative beliefs

			95% CI				
Belief about	***b***	***SE***	**Low**	**Up**	**β**	***t***	***p***
Intercept	3.76	0.33	3.11	4.41		11.49	< .001
Students who want to learn more	0.00	0.01	-0.02	0.02	0.04	0.40	0.693
Studious, hardworking students	0.00	0.01	-0.03	0.01	-0.09	-0.81	0.422

3.2.3 PBC beliefs

Table A3 in the Appendix presents the correlations between intention and PBC beliefs, as well as among the PBC beliefs themselves. Five beliefs were significantly correlated with intention and were entered as predictors in the regression analysis explaining PBC-capacity. These were the beliefs that:

- fixed class times (r = 0.182, p = 0.049),

- enjoyable format ($r = 0.383$, $p < .001$),
- links to other courses/curriculum ($r = 0.212$, $p = 0.022$),
- friendly, welcoming atmosphere ($r = 0.303$, $p < .001$),
- being already competent in analysis, structuring, argumentation, and writing ($r = 0183$, $p = 0.046$),

would facilitate/hinder course attendance. Again, although some of these beliefs were correlated with one another (Table A3), collinearity diagnostics indicated no problematic multicollinearity (see Table A5 in the Appendix).

Results showed that these beliefs were significantly associated with PBC-capacity and accounted for 23% of its variance, ($F(5,108) = 5.72$, $p < .001$, adjusted $R^2 = .173$). As shown in Table 6, one belief made a unique contribution to the explanation of PBC-capacity beyond the other predictors: the belief that fixed class times facilitate course attendance ($b = 0.02$, $t(108) = 2.13$, $p = .035$). The belief regarding the enjoyable course format approached statistical significance but did not reach the conventional significance threshold.

Table 7

Regression of PBC-capacity on PBC beliefs

			95% CI				
Belief about	***b***	***SE***	**Low**	**Up**	**β**	***t***	***p***
Intercept	1.97	0.54	0.91	3.04		3.68	< .001
Fixed class times	0.02	0.01	0.01	0.05	0.19	2.13	0.035
Enjoyable format	0.03	0.01	0.00	0.05	0.20	1.97	0.051
Links to other courses/curriculum	0.02	0.01	-0.01	0.05	0.13	1.31	0.194
Friendly, welcoming atmosphere	0.01	0.01	-0.01	0.04	0.11	1.00	0.318
Being already competent in analysis, structuring, argumentation, and writing	0.02	0.01	-0.01	0.05	0.13	1.44	0.151

3.3 Alternative targets

3.3.1 Attitudinal beliefs

Eight of the nine behavioral beliefs included in the regression analyses—i.e., all but the belief related to the time left for other courses—were significantly intercorrelated (see Table A3 in the Appendix). The hierarchical cluster analysis provided additional insight into the way these beliefs were organized based on similarities in participants' response patterns (Figure 2).

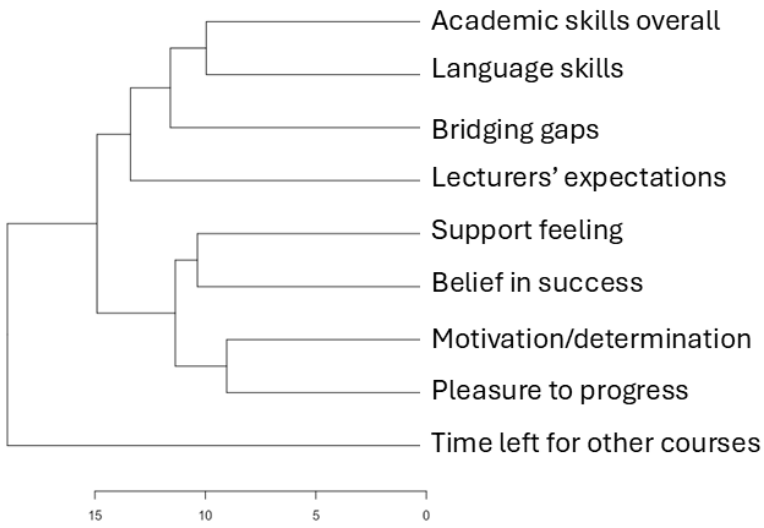


Fig. 2

Hierarchical clustering dendrogram of attitudinal beliefs

Starting from the critical target predicting *instrumental attitude* and relating to overall academic skills, the dendrogram shows that this belief is part of a first cluster including three additional beliefs that are progressively linked to it: the belief that the course would develop language skills, the belief that the course would help bridge gaps in knowledge and skills, and, finally, the belief that it would help students understand lecturers' expectations. The progressive aggregation of these beliefs suggests that they do not form independent dimensions but rather reflect closely related facets of a common underlying representation of the course as a means of improving students' academic functioning. Therefore, these beliefs were retained as alternative targets, considered according to their order of aggregation.

Starting from the critical target predicting *experiential attitude* and relating to feelings of support, the belief concerning confidence in one's success showed the greatest similarity in response patterns and merged first with the critical target. The beliefs concerning the pleasure of making progress and motivation first merged with one another before joining the node containing the critical target and confidence in one's success. This suggests that they reflect a distinct but related dimension rather than direct alternative expressions of the same underlying belief. Consequently, only the belief about one's confidence in success was retained as an alternative target.

3.3.2 PBC beliefs

Regarding the PBC beliefs, only one belief was significantly correlated with the critical target concerning fixed class times (see Table A3). Specifically, the belief that the developmental course content is connected to other courses and the curriculum was significantly associated with the critical target ($r = .22$, $p = 0.016$) and was therefore retained as an alternative intervention target.

4. Discussion

This study aimed to identify the determinants of students' intention to attend developmental language courses and to pinpoint intervention targets to boost attendance, thereby supporting students' acquisition of language skills essential for academic success (Barbera et al., 2020; Hewagallage et al., 2022).

4.1 Key determinants of varying importance

Aligning with H1 and previous research, the TPB determinants explained a substantial proportion of students' intention to attend an optional developmental language course—nearly 70%. This exceeds typical social science benchmarks, where 10% is acceptable and 10–50% is good (Ozili, 2023). This result powerfully validates TPB as a framework of choice for researching developmental course attendance barriers and facilitators.

Unlike many studies, we separated the two facets of each determinant based on preliminary analyses – in line with La Barbera and Ajzen's (2024) call to distinguish instrumental from experiential attitudes. This approach revealed more nuanced mechanisms. The contribution of one facet of each determinant followed the classic TPB hierarchy (Armitage & Conner, 2001; McEachan et al., 2011), as predicted by H2: instrumental attitude ranked strongest, followed by PBC-ability, then descriptive norm. Moreover, experiential attitude showed a marginal effect despite overlap with instrumental attitude. An important insight from these findings – and their strong convergence with previous TPB research – is that researchers and course designers should prioritize benefits (instrumental attitude), then self-efficacy (PBC-ability), and finally (non-)attenders (descriptive norms) in both research and attendance-boosting interventions. Experiential expectations (experiential attitude) play a secondary but complementary role. The following section examines the beliefs underlying these factors and proposes intervention strategies targeting these beliefs, prioritized according to their potential impact.

4.2 Influential beliefs to target through interventions

Consistent with H3, the beliefs examined in this study (and elicited in the pilot study) encompass most factors highlighted in the literature review. Testing these beliefs together in one study pinpoints which of these numerous variables truly drive students' intention to attend an optional developmental language course independently, making them prime intervention targets (von Haeften et al., 2001). Associated beliefs provide additional intervention targets that may also be worth considering.

4.2.1 Improved linguistic skills are not the only nor the most important expected benefit

The expected benefit that contributed most to students' perceived magnitude of the benefits of attending a developmental language course (i.e., instrumental attitude) was improved overall academic skills. This benefit was closely related to enhancing analytical,

organizational, argumentative, and writing abilities, suggesting that students perceive developmental language courses as a means of improving their broader academic functioning. Beyond language improvement, these courses also appear to be viewed as a way to bridge gaps in knowledge and skills and to gain a better understanding of lecturers' expectations, which are known to promote academic success (Nicol, 2009; Tinto, 2012). These findings are consistent with previous research by Lobo and Gurney (2014) and suggest that students do not attend developmental language courses solely to improve their linguistic skills, but also expect them to foster broader academic abilities.

As a consequence, a first recommendation would be not to limit developmental language courses to purely linguistic aspects, but to integrate guidance aimed at fostering broader academic skills, for example by providing practical advice on study strategies. However, this should not mean that language specialists are expected to act as study skills advisers, as this falls within the expertise of other professionals. Instead, these courses could be co-designed with learning advisers or academic skills specialists to enhance their attractiveness. They could also involve lecturers in making their academic expectations more explicit. Such a collaborative design, involving multiple institutional stakeholders, is consistent with the view that learner's achievement is *everybody's business* (Kift, 2008) and aligns with the principles of a *Whole Institution Approach* to widening participation and student success (see Kift, 2021; Leduc et al., 2026; Thomas, 2020). A second recommendation concerns the gaps to be addressed: developmental language courses would also benefit from identifying students' knowledge gaps as precisely as possible, thereby allowing individualized support to be provided, in line with the work of Lobo and Gurney (2014).

4.2.2 Course timetable and links with the other courses

The factor that contributed most to students' perceived capacity to attend the course (i.e., PBC-capacity) was the course schedule, consistent with previous research (Almaghaslah

& Alsayari, 2022; Plumat et al., 2012). This finding is particularly important given recent evidence that students tend to view HE as one life domain among many and are reluctant to sacrifice personal development or social connections (Ryndak & Saldaeva, 2020). In this context, students' growing preference for compact timetables (Castiñeiras et al., 2025) makes the scheduling of optional developmental courses particularly challenging. Delavande et al. (2025) showed that students' daily attendance decisions are strongly influenced by the structure of their timetables—the order, spacing, and arrangement of classes—and that students are more likely to attend classes when they are scheduled back-to-back rather than in isolation. Accordingly, a third recommendation would be to optimize course scheduling and in particular to avoid scheduling optional developmental courses in isolation. According to authors such as Oude Vrielink et al. (2017) and Castineiras et al. (2025), moving away from manual scheduling processes and adopting software solutions can facilitate this optimization by improving the allocation of time for students and lecturers while preserving their energy and cognitive resources.

The notion of resources in relation to scheduling is particularly relevant given the close connection, from students' perspective, between the course timetable and the extent to which the course is linked to their other courses and the broader curriculum, a connection that has already been highlighted by Crétin et al. (2022). These considerations regarding scheduling, available resources, and curricular integration converge with research on perceived workload. Indeed, Scully and Kerr (2014) showed that students' workload perceptions are influenced by the alignment between courses and the broader curriculum. As emphasized by Kember (2004), for workload to be perceived as acceptable, attention should be given both to a transparent relationship between the components of the program and to teaching that concentrates on key concepts, echoing the importance of compactness. A fourth recommendation would therefore be to ensure that the objectives and content of

developmental language courses are clearly connected to the rest of the program. Achieving this again calls for collaboration among multiple stakeholders: for example, instructors of developmental language courses could design exercises that draw on elements from other courses within the curriculum. Kember (2004) further stresses the importance of obtaining meaningful student feedback to determine whether curriculum designers' intentions match students' perceptions.

4.2.3 Unspecified (non-)attenders

Normative referents included in this study did not shape students' perceptions of who would (not) attend developmental language courses, leaving no clear avenue for intervention. While peers influence support program attendance (Thomas & Tagler, 2019; Weuffen et al., 2021), distinguishing peer subgroups may add little value. A few close peers attendance might also matter more than broader peer groups (Li et al., 2023; Steenberghs et al., 2021).

4.2.4 From perceived support to confidence in academic success

The extensive literature on student well-being as a determinant of academic engagement and success (Bücker et al., 2018) underscores the importance of examining students' experiential expectations regarding attendance. The factor that contributed most to students' expectations that attending the course would be a positive experience in the experiential sense of the term was the belief that they would feel supported by doing so. This affective dimension is not necessarily what one would expect students to seek from a developmental language course, particularly in HE contexts where professional norms may be less conducive to emotional support (Hagenauer et al., 2016). Nevertheless, this finding is consistent with research distinguishing emotional support provided by instructors from other forms of support and highlighting its unique contribution to student engagement (Jia & Cheng, 2024). Some studies have even suggested that the affective dimension of teacher–student relationships may be the aspect most strongly associated with students' engagement in

their studies (Snijders et al., 2020). One possible explanation may lie in our own findings: feeling supported is closely related to believing in one's chances of succeeding. This interpretation is consistent with the findings of Laksmiwati and Tondok (2023), who showed that perceived social support predicts academic self-efficacy, and with those of Cheng et al. (2025), who demonstrated that academic self-efficacy predicts student engagement.

A fifth intervention recommendation would be to address instructors' perceptions of faculty-student relationships to prevent expectations of independence in HE from leading them to question the value of a caring relationship. Indeed, such relationships may sometimes be viewed as unnecessary or even detrimental because of hierarchical dynamics and unequal distributions of power (Hagenauer & Volet, 2014). However, Schneider and Preckel's (2017) scoping review of meta-analyses on predictors of academic success in HE suggests that students' expectations of receiving support are not unfounded, as it highlights the importance of instructors' availability and empathy.

4.3 Generalizability of findings

TPB belief elicitation is context-specific, potentially limiting generalizability. Yet the core determinants of students' intention to attend developmental language courses and their hierarchy align with meta-analyses (Armitage & Conner, 2001; McEachan et al., 2011), supporting robustness at this level. At the belief level, contextual tailoring strengthens relevance: academic help-seeking varies by context (Bornschlegl et al., 2020), and customized beliefs enable more effective interventions (von Haeften et al., 2001). However, this approach could also restrict generalizability of the specific beliefs examined—and which prove influential. In this study, however, the beliefs elicited in the pilot study (Table 1) encompass nearly all factors identified in prior literature across four continents:

- Outcomes/experiences concern linguistic/academic skills (Lobo & Gurney, 2014—Australia), added workload (Crétin et al., 2022—France), inferiority feelings

threatening self-esteem (Koch et al., 2012—USA; Li & Wang, 2026—UK; Winograd & Rust, 2014—USA)

- Expected attenders are diverse peer subgroups (Weuffen et al., 2021—Australia)
- Facilitators/impeders are perceived competence (Al-Zahrani, 2023—Saudi Arabia; Plumat et al., 2012—Belgium), course information (Plumat et al., 2012—Belgium), perceived uselessness (Li & Wang, 2026—UK; Park et al., 2016—USA), teaching methods (Lobo & Gurney, 2014—Australia), curriculum relevance (Crétin et al., 2022—France), schedules (Almaghaslah &Alsayari, 2022—Saudi Arabia; Plumat et al., 2012—Belgium), commuting (Skoglund et al., 2020—USA).

This worldwide convergence suggests the beliefs examined here are robust beyond this specific setting. Among them, the influential ones also align with global literature, indicating some generalizability of the intervention targets—though replications remain essential, as contextual factors operate at the belief level (Ajzen, 1991). Since beliefs correspond to factors consistently evidenced worldwide, this study's materials could serve directly for cross-country replications, enabling meta-analyses—as routinely conducted across TPB domains—to identify stable invariants.

4.4 Limitations and future perspectives

A first limitation is that this study assessed students' intention to attend a developmental language course before the course began, rather than actual attendance. Although intention is the most proximal determinant of behavior in the TPB (Ajzen, 1991), the intention–behavior relationship is not perfect, and discrepancies may arise when students' actual control over attendance differs from their perceived control, for example because of unforeseen barriers, or when the time interval between the assessment of intention and the opportunity to attend the course allows circumstances to change and prevents students from

acting on their intentions (Sheeran, 2002; Webb & Sheeran, 2006).This issue may be particularly relevant for optional developmental courses, for which attendance requires students to allocate additional time and effort beyond their regular curriculum. Consequently, the beliefs identified in this study should be interpreted as factors associated with students' willingness to participate rather than definitive predictors of actual attendance. Future research should therefore examine whether these beliefs predict initial uptake and sustained attendance throughout the semester.

A second limitation is that no specific normative referent was identified as influential in shaping students' perceptions of attendance. Further research is therefore needed to identify which social referents most influence participation in developmental language courses. In particular, the role of close peers' attendance may represent an interesting avenue for investigation, as peers may constitute salient sources of normative influence in students' decisions to engage in optional support activities (Li et al., 2023).

A third limitation is that the proposed interventions have not yet been empirically evaluated. Although belief-based interventions are theoretically grounded in the TPB, changing beliefs does not automatically guarantee changes in intentions or behavior (Ajzen, 1991; Hardeman et al., 2002). Future research should therefore assess whether targeting the beliefs identified in this study effectively increases intention to attend developmental language courses and, ultimately, actual participation.

A final avenue for further research concerns the timing of developmental language courses. Although no differences emerged in the present study, the timing of support within the academic calendar may influence how students perceive both their need for help and the benefits they may derive from it. Research on formative assessment suggests that support is particularly valuable when it is provided early enough for students to adjust their learning strategies and address difficulties before high-stakes assessments (e.g., Nicol & Macfarlane-

Dick, 2006). Conversely, support offered after unsuccessful examinations may occur at a point when students experience increased academic pressure. Future studies should therefore examine whether the positioning of optional developmental language courses before or after examination periods influences students' perceptions, uptake, and sustained participation.

5. Conclusion

HE institutions increasingly welcome diverse student populations, including students who may enter university with heterogeneous levels of language proficiency and academic preparedness. Developmental language courses represent an important means of supporting these students, yet their potential contribution is limited when optional courses fail to attract those who could benefit from them. By examining the determinants of students' intentions to attend such a course and their unerlying beliefs, this study highlights that participation is not driven solely by perceived language needs and that course scheduling, peers attendance and instructor support matter. These results call for a whole-institution approach to student success, in which support initiatives are not peripheral remedial measures but coordinated elements of the educational experience.

Disclosure Statement

We have no conflicts of interest to declare.

References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Ajzen, I. (2006). *Constructing a TPB questionnaire: Conceptual and methodological considerations*. https://people.umass.edu/aizen/pdf/tpb.measurement.pdf

Ajzen, I. (2015). The theory of planned behaviour is alive and well, and not ready to retire: A commentary on Sniehotta, Presseau, and Araújo-Soares. *Health Psychology Review*, *9*(2), 131–137. https://doi.org/10.1080/17437199.2014.883474

Ajzen, I. (2020). The theory of planned behavior: Frequently asked questions. *Human Behavior and Emerging Technologies*, *2*(4), 314–324. https://doi.org/10.1002/hbe2.195

Al-Zahrani, A. A. (2023). Prospective role of the remedial programs to improve the performance of low achievers in English language courses. *Eurasian Journal of Applied Linguistics, 9*(3), 226–237. https://doi.org/10.32601/ejal.903020

Almaghaslah, D., & Alsayari, A. (2022). Academic help-seeking behaviours of undergraduate pharmacy students in Saudi Arabia: usage and helpfulness of resources. *Healthcare, 10*(7), 1264. https://doi.org/10.3390/healthcare10071264

Armitage, C. J. (2015). Time to retire the theory of planned behaviour? A commentary on Sniehotta, Presseau and Araújo-Soares. *Health Psychology Review, 9*(2), 151–155. https://doi.org/10.1080/17437199.2014.892148

Armitage, C. J., & Conner, M. (2001). Efficacy of the theory of planned behaviour: A meta-analytic review. *British Journal of Social Psychology, 40*(4), 471–499. https://doi.org/10.1348/014466601164939

Barbera, S. A., Berkshire, S. D., Boronat, C. B., & Kennedy, M. H. (2020). Review of undergraduate student retention and graduation since 2010: Patterns, predictions, and recommendations for 2020. *Journal of College Student Retention: Research, Theory and Practice*, *22*(2), 227–250. https://doi.org/10.1177/1521025117738233

Barkaoui, K. (2025). The relationship between English language proficiency test scores and academic achievement: A longitudinal study of two tests. *Language Testing*, *42*(3), 253-282. https://doi.org/10.1177/02655322251319284

Bettinger, E. P., Boatman, A., & Long, B. T. (2013). Student supports: developmental education and other academic programs. *The Future of Children*, *23*(1), 93–115. http://www.jstor.org/stable/23409490

Bettinger, E. P., & Long, B. T. (2009). Addressing the needs of underprepared students in higher education: Does college remediation work? *Journal of Human Resources*, *44*(3), 736–771. https://doi.org/10.3368/jhr.44.3.736

Bornschlegl, M., Meldrum, K., & Caltabiano, N. J. (2020). Variables related to academic help-seeking behaviour in higher education: findings from a multidisciplinary perspective. *Review of Education*, *8*(2), 486–522. https://doi.org/10.1002/rev3.3196

Bücker, S., Nuraydin, S., Simonsmeier, B. A., Schneider, M., & Luhmann, M. (2018). Subjective well-being and academic achievement: A meta-analysis. *Journal of Research in Personality*, *74*, 83–94. https://doi.org/10.1016/j.jrp.2018.02.007

Castineiras, I., Grimes, D., Ozturk, C. (2025). Developing a university timetabling assistant tool to address the voice of students. In O., McDermott, K., Cormican, J. Antony, M., Sony, C. Laux, E. Cudney, J.C. Sa, B. Lameijer and A. Rosa (Eds.), *Advances in Operational Excellence in the Higher Education Sector: Proceedings of the 7th*

International Conference on Lean Six Sigma for Higher Education Institutions and other Public Sector Organisations. https://doi.org/10.1007/978-3-031-84816-2_22

Chen, C., Sun, Y., & Zhu, Y. (2025). The mechanism of academic self-efficacy in the relationship between professional identity and learning engagement among university students. *Scientific Reports,* 15, 10640. https://doi.org/10.1038/s41598-025-95556-z

Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*(1), 155-159. https://www2.psych.ubc.ca/~schaller/528Readings/Cohen1992.pdf

Complete College America. (2012). *Remediation: Higher Education's Bridge to Nowhere*. https://completecollege.org/wp-content/uploads/2025/08/CCA-Remediation-final.pdf

Côté, F., Gagnon, J., Houme, P. K., Abdeljelil, A. B., & Gagnon, M. P. (2012). Using the Theory of Planned Behaviour to predict nurses' intention to integrate research evidence into clinical decision-making. *Journal of Advanced Nursing*, *68*(10), 2289-2298. https://doi.org/10.1111/j.1365-2648.2011.05922.x

Crétin, R., Miguet, M., & Pirolli, F. (2022). La communication écrite à l'université, un enseignement polymorphe à la croisée de la réussite étudiante et de la professionnalisation [Written communication at university: A multifaceted form of teaching at the intersection of student success and professionalization]. *Revue Communication & Professionnalisation*, *13*, 144-160. https://doi.org/10.14428/rcompro.v13i13.65393

De Jonge, L. P., Mesters, I., Govaerts, M. J., Timmerman, A. A., Muris, J. W., Kramer, A. W., & Van Der Vleuten, C. P. (2020). Supervisors' intention to observe clinical task performance: an exploratory study using the theory of planned behaviour during postgraduate medical training. *BMC Medical Education*, *20*(1), 134. https://doi.org/10.1186/s12909-020-02047-y

Delavande, A., Del Bono, E., Holford, A. J., & Williams, K. (2025). *Timetables, attendance and academic achievement in higher education* (IZA Discussion Paper No. 17979). IZA – Institute of Labor Economics. https://www.econstor.eu/bitstream/10419/325037/1/dp17979.pdf

Demanet, L. (2024). Les dispositifs de soutien à la langue française écrite dans le département des sciences logopédiques de la Haute École Provinciale de Hainaut-Condorcet: quelle efficacité? Le point de vue des étudiants [French Written Language Support Programs in the Department of Speech and Language Therapy Sciences at Haute École Provinciale de Hainaut-Condorcet: How Effective Are They? Students' Perspectives]. *NEXUS: Connecting Teaching Practice and Research*, *4*(1), 147-175. https://doi.org/10.14428/nexus.v4i1.66733

Devos, N. J., Nizonkiza, D., & Lynch, S. (2024). Developing and validating a post-admission screening-diagnostic assessment procedure to offer language support in diploma programs. *Canadian Journal of Applied Linguistics*, *27*(1), 51–77. https://doi.org/10.37213/cjal.2024.33259

Faye, A., Charalampopoulou, C., & Prévot, C. (2024). Analyse d'un dispositif de remédiation à l'université. Compte-rendu d'expériences et questionnements pédagogiques [Analysis of a university remediation programme. Report on experiences and pedagogical reflections]. *Éducation, Cognition, Coopération*. https://hal.science/hal-04596704/document

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Addison-Wesley.

Ganga, E. C., Mazzariello, A. N., & Edgecombe, N. D. (2018). *Developmental education: An introduction for policymakers*. Education Commission of the States. https://files.eric.ed.gov/fulltext/ED582926.pdf

Garrett, N., Bridgewater, M., & Feinstein, B. (2017). How student performance in first-year composition predicts retention and overall student success. In T. Ruecker, D. Shepherd, H. Estrem, B. Brunk-Chavez (Eds.), *Retention, Persistence, and Writing Programs* (pp. 93-113). University Press of Colorado, Boulder.

Ghenghesh, P. (2015). The relationship between English language proficiency and academic performance of university students–should academic institutions really be concerned?. *International Journal of Applied linguistics and English literature*, *4*(2), 91-97. http://dx.doi.org/10.7575/aiac.ijalel.v.4n.2p.91

Greene, J. P., & Forster, G. (2003). *Public high school graduation and college readiness rates in the United States* (Education Working Paper No. 3). The Manhattan Institute for Policy Research. https://files.eric.ed.gov/fulltext/ED498138.pdf

Hagenauer, G., Gläser-Zikuda, M., & Volet, S. (2016). University teachers' perceptions of appropriate emotion display and high-quality teacher-student relationship : Similarities and differences across cultural-educational contexts. *Frontline Learning Research*, *4*(3), 44-74. https://doi.org/10.14786/flr.v4i3.236

Hagenauer, G., & Volet, S. E. (2014). Teacher–student relationship at university: an important yet under-researched field. *Oxford Review of Education*, *40*(3), 370-388. https://doi.org/10.1080/03054985.2014.921613

Hamilton, K., Peden, A. E., Pearson, M., & Hagger, M. S. (2016). Stop there's water on the road! Identifying key beliefs guiding people's willingness to drive through flooded waterways. *Safety Science*, *89*, 308-314. https://doi.org/10.1016/j.ssci.2016.07.004

Hamilton, K., & Schmidt, H. (2013). Critical beliefs underlying young Australian males' intentions to engage in drinking and swimming. *Sage Open*, *3*(4), 2158244013508959 https://doi.org/10.1177/2158244013508959

Hamilton, K., Spinks, T., White, K. M., Kavanagh, D. J., & Walsh, A. M. (2016). A psychosocial analysis of parents' decisions for limiting their young child's screen time: An examination of attitudes, social norms and roles, and control perceptions. *British Journal of Health Psychology*, *21*(2), 285-301. https://doi.org/10.1111/bjhp.12168

Hardeman, W., Johnston, M., Johnston, D., Bonetti, D., Wareham, N., & Kinmonth, A. L. (2002). Application of the theory of planned behaviour in behaviour change interventions: A systematic review. *Psychology and Health*, *17*(2), 123-158. https://doi.org/10.1080/08870440290013644a

Hewagallage, D., Christman, E., & Stewart, J. (2022). Examining the relation of high school preparation and college achievement to conceptual understanding. *Physical Review Physics Education Research*, *18*(1), 010149. https://doi.org/10.1103/PhysRevPhysEducRes.18.010149

Hoffmann, N., & Freise, F. (2024). Rollen und Einflussmöglichkeiten von Schreibzentren an deutschen Hochschulen. Ergebnisse einer deutschlandweiten Umfrage zu Rahmenbedingungen und Aktivitäten von Schreibzentren [Roles and possibilities of influence of writing centers at German universities. Results of a nationwide survey on the conditions and activities of writing centers.]. *HERMES - Journal of Language and Communication in Business*, 64, 253–270. https://doi.org/10.7146/hjlcb.vi64.153162

Huart, J., Basteyns, A., Auquière, A., & Lanotte, A.-F. (2025, May 26–28). *Student participation in support activities from the perspective of the Theory of Planned*

Behavior: The case of exam preparation seminars [Paper presentation]. European First Year Experience, Leuven, Belgium. https://hdl.handle.net/2268/332948

Huart, J., Leduc, L., Laurent, N., Detroz, P., Martynow, N., Charbaut, C., Malengrez, D., Vierset, V., Lambert, I., Gabriel, L., Vieujean, A.-C., Compère, F., & Verpoorten, D. (2022). Faculty's barriers to mentoring freshmen within an interinstitutional context: Applying the theory of planned behavior. *Mentoring & Tutoring: Partnership in Learning, 30*(5), 503–523. https://doi.org/10.1080/13611267.2022.2127255

Huart, J., Leduc, L., Laurent, N., Detroz, P., Martynow, N., Malengrez, D., Compère, F., Lambert, I., Vieujean, A.-C., Vierset, V., & Verpoorten, D. (2023). Freshmen's barriers to be mentored by faculty: Applying the theory of planned behavior. *Mentoring & Tutoring: Partnership in Learning, 31*(5), 574–596. https://doi.org/10.1080/13611267.2023.2265860

Izatullah, S., Nasir, R., & Gul, F. (2022). A study to examine the relationship between English language proficiency and academic achievement of students in higher education institutions. *Global Educational Studies Review*, *7*(1), 164-171. http://dx.doi.org/10.31703/gesr.2022(VII-I).17

Jia, M., & Cheng, J. (2024). Effect of teacher social support on students' emotions and learning engagement : A U.S.-Chinese classroom investigation. *Humanities & Social Sciences Communications*, *11*, 158. https://doi.org/10.1057/s41599-024-02634-0

Jimenez, L., Sargrad, S., Morales, J., & Thompson, M. (2016*). Remedial Education: The Cost of Catching Up*. Center for American Progress. Retrieved from https://files.eric.ed.gov/fulltext/ED586241.pdf

Johnson, C., Gitay, R., Abdel-Salam, A. S. G., BenSaid, A., Ismail, R., Al-Tameemi, R. A. N., Romanowski, M. H., Kazem Al Fakih, B. M., & Al Hazaa, K. (2022). Student support

in higher education: campus service utilization, impact, and challenges. *Heliyon*, *8*(12). https://doi.org/10.1016/j.heliyon.2022.e12559

Kember, D. (2004). Interpreting student workload and the factors which shape students' perceptions of their workload. *Studies in Higher Education*, *29*(2), 165–184. https://doi.org/10.1080/0307507042000190778

Kift, S. (2008). The next, great first year challenge: Sustaining, coordinating and embedding coherent institution-wide approaches to enact the FYE as everybody's business. In *Conference Proceedings 11th Pacific Rim First Year in Higher Education Conference 2008,* pp. 1-23. QUT Publications. https://eprints.qut.edu.au/14401/1/14401.pdf

Kift, S. (2015). A decade of transition pedagogy: A quantum leap in conceptualising the first year experience. *HERDSA Review of Higher Education*, *2*(1), 51-86.

Kift, S. (2021). Whole-of-institution transformation for first year learning and success. In H. Huijser, M. Kek, & F. F. Padró (Eds.), *Student support services: University development and administration*. Springer. https://doi.org/10.1007/978-981-13-3364-4_34-1

Koch, B., Slate, J. R., & Moore, G. (2012). Perceptions of students in developmental classes. *Community College Enterprise*, *18*(2), 62-82. https://home.schoolcraft.edu/cce/18.2.62-82.pdf

La Barbera, F., & Ajzen, I. (2020). Understanding support for European integration across generations: A study guided by the theory of planned behavior. *Europe's Journal of Psychology*, *16*(3), 437. https://doi.org/10.5964/ejop.v16i3.1844

La Barbera, F., & Ajzen, I. (2024). Instrumental vs. experiential attitudes in the theory of planned behaviour: two studies on intention to perform a recommended amount of

physical activity. *International Journal of Sport and Exercise Psychology*, *22*(3), 632-644. https://doi.org/10.1080/1612197X.2022.2161107

Lafontaine, L., Emery-Bruneau, J., & Guay, A. (2015). Dispositifs didactiques en littératie universitaire: le cas du Centre d'aide en français écrit à l'Université du Québec en Outaouais [Instructional Approaches to Academic Literacy: The Case of the Written French Support Centre at the Université du Québec en Outaouais]. *Linx. Revue des Linguistes de l'Université Paris X Nanterre*, (72), 39-54. https://doi.org/10.4000/linx.1590

Laksmiwati, E. D., & Tondok, M. S. (2023). Perceived social support, academic self-efficacy, and anxiety among final year undergraduate students: A mediation analysis. *Bulletin of Counseling and Psychotherapy*, *5*(2), 173-183. https://doi.org/10.51214/00202305514000

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge University Press.

Leduc, L., Huart, J., Duchâteau, D., Nyssen, A.-S., Schoenaers, F., & Detroz, P. (2026). Une démarche de mapping des pratiques d'accompagnement de la réussite des étudiants de première année : Illustrations dans quatre facultés d'une université belge francophone [Mapping practices for supporting first-year student success: Illustrations from four faculties at a French-speaking Belgian university]. In M. De Clercq, I. Bournaud, R. Philion, & J. Felder (Eds.), *Accompagnement à la réussite des personnes étudiantes dans l'enseignement supérieur : Des regards multiples*. Peter Lang. https://doi.org/10.3726/b23802

Li, M., & Wang, F. (2026). "I thought I knew how to write in my own language…" unveiling vulnerability in NES university students' English academic writing experience.

Journal of English for Academic Purposes, *79*, 101618. https://doi.org/10.1016/j.jeap.2025.101618

Lobo, A., & Gurney, L. (2014). What did they expect? Exploring a link between students' expectations, attendance and attrition on English language enhancement courses. *Journal of Further and Higher Education*, *38*(5), 730-754. https://doi.org/10.1080/0309877X.2013.817002

MacArthur, C. A. (2023). Postsecondary developmental education in writing: Issues and research. In X. Liu, M. Hebert, & R. A. Alves (Eds.), *The hitchhiker's guide to writing research: Literacy studies* (Vol. 25). Springer. https://doi.org/10.1007/978-3-031-36472-3_18

Malone, C., Coleman, C., Freeman, E., & Jamison-Powell, S. (2020). Embedding academic literacies through growing student and staff communities. *Journal of Academic Writing*, *10*(1), 98–112. https://doi.org/10.18552/joaw.v10i1.625

Massart, X., Collard, A., Mazy, A., Dejean, K., & Romainville, M. (2019). Représentations des prérequis et participation à des dispositifs de promotion de la réussite à l'université [Representations of prerequisite knowledge and participation in university student success support programmes.]. In C. Gremion, N. Younès, & E. Sylvestre (Eds.), *Actes du 31ème Colloque scientifique international de l'ADMEE-Europe : Entre normalisation, contrôle et développement formatif. Évaluations sources de synergies ?* (pp. 64-68). IFFP et CSE de l'Université de Lausanne. https://pure.unamur.be/ws/portalfiles/portal/40797604/Communication_95_Repr_sentations_des_pr_requis.pdf

McEachan, R. R. C., Conner, M., Taylor, N. J., & Lawton, R. J. (2011). Prospective prediction of health-related behaviours with the theory of planned behaviour: A meta-analysis.

Health Psychology Review, *5*(2), 97-144. https://doi.org/10.1080/17437199.2010.521684

Neilson, S., & King, T. R. (2023). The development of an academic literacies programme for students in Britain and beyond. *Journal of Academic Writing*, *13*(2), 1–23. https://doi.org/10.18552/joaw.v13i2.579

Nicol, D. (2009). Quality enhancement themes: The first year experience. *Transforming assessment and feedback: enhancing integration and empowerment in the first year.* Scotland: The Quality Assurance Agency for Higher Education. https://dera.ioe.ac.uk/id/eprint/11605/1/First_Year_Transforming_Assess.pdf

Nicol, D. J., & Macfarlane-Dick, D. (2006). Formative assessment and self-regulated learning: A model and seven principles of good feedback practice. *Studies in Higher Education, 31*(2), 199–218. https://doi.org/10.1080/03075070600572090

Oude Vrielink, R., Jansen, E., Gort, E., van Hillegersberg, J., & Hans, E. (2017). Towards improving tenders for Higher Education timetabling software: Uncovering the selection criteria of HEIs when choosing timetabling applications, using ERP as a reference. In A. Gunawan, G. Kendall, L. S. Lee, B. McCollum, & H.-V. Seow (Eds.), *MISTA 2017 Proceedings: 5-8 December 2017, Kuala Lumpur, Malaysia* (pp. 173-188).

Ozili, P. K. (2023). The acceptable R-square in empirical modelling for social science research. In *Social research methodology and publishing results: A guide to non-native English speakers* (pp. 134-143). IGI global. https://mpra.ub.uni-muenchen.de/116496/1/MPRA_paper_116496.pdf

Park, T., Woods, C. S., Richard, K., Tandberg, D., Hu, S., & Jones, T. B. (2016). When developmental education is optional, what will students do? A preliminary analysis of

survey data on student course enrollment decisions in an environment of increased choice. *Innovative Higher Education*, *41*(3), 221-236. https://doi.org/10.1007/s10755-015-9343-6

Parsad, B. (2003). *Remedial education at degree-granting postsecondary institutions in fall 2000*. National Center for Education Statistics, US Department of Education, Institute of Education Sciences. https://files.eric.ed.gov/fulltext/ED482370.pdf

Peteranetz, M. S., Flanigan, A. E., Shell, D. F., & Soh, L. K. (2018). Career aspirations, perceived instrumentality, and achievement in undergraduate computer science courses. *Contemporary Educational Psychology*, *53*, 27-44. https://doi.org/10.1016/j.cedpsych.2018.01.006.

Phillips, A. (2019). The quest for diversity in higher education. *Pepperdine Policy Review*, *11*(1), 4. https://digitalcommons.pepperdine.edu/ppr/vol11/iss1/4/

Plumat, J., Baillet, D., Pollet, M.-C., Slosse, P., Cobut, B., Vanden Eynde, C., & Houart, M. (2012). Comment favoriser la présence et la participation active des étudiants aux dispositifs d'aide à la réussite [How to promote student attendance and active participation in academic support programs?]? *Proceedings of the 27th meeting of the Association Internationale de Pédagogie Universitaire*. Trois Rivières: AIPU. https://dial.uclouvain.be/pr/boreal/object/boreal:111186

Roland, N., Frenay, M., & Boudrenghien, G. (2018). Understanding academic persistence through the theory of planned behavior: Normative factors under investigation. *Journal of College Student Retention: Research, Theory & Practice*, *20*(2), 215-235. https://doi.org/10.1177/1521025116656632

Rose, M. (2012). Rethinking remedial education and the academic-vocational divide. *Mind, Culture, and Activity*, *19*(1), 1–16. https://doi.org/10.1080/10749039.2011.632053

Ryndak, V. G., & Saldaeva, O. V. (2020). Students from generation z: trends in education and development. *International Journal of Innovation*, *12*(3), 619-634. https://www.ijicc.net/images/vol12/iss3/12303_Ryndak_2020_E_R.pdf

Sadler, T. D. (2009). Situated learning in science education: socio-scientific issues as contexts for practice. *Studies in Science Education*, *45*(1), 1–42. https://doi.org/10.1080/03057260802681839

Schneider, M., & Preckel, F. (2017). Variables associated with achievement in higher education: A systematic review of meta-analyses. *Psychological bulletin*, *143*(6), 565-577. https://psycnet.apa.org/doi/10.1037/bul0000098

Schwartz, J. (2017). *College students and the stigma of developmental reading: Examining students' experiences, perceptions and academic performance* [Doctoral dissertation, Northern Illinois University]. Huskie Commons. https://huskiecommons.lib.niu.edu/allgraduate-thesesdissertations/1838/

Scully, G., & Kerr, R. (2014). Student workload and assessment: Strategies to manage expectations and inform curriculum development. *Accounting Education*, *23*(5), 443–466. https://doi.org/10.1080/09639284.2014.947094

Sheeran, P. (2002). Intention—behavior relations: A conceptual and empirical review. *European Review of Social Psychology*, *12*(1), 1–36. https://doi.org/10.1080/14792772143000003

Skoglund, E., Fernandez, J., Sherer, J. T., Coyle, E. A., Garey, K. W., Fleming, M. L., & Sofjan, A. K. (2020). Using the theory of planned behavior to evaluate factors that influence pharmD students' intention to attend lectures. *American Journal of Pharmaceutical Education*, *84*(5), 7550. https://doi.org/10.5688/ajpe7550

Sniehotta, F. F., Presseau, J., & Araújo-Soares, V. (2014). Time to retire the theory of planned behaviour. *Health Psychology Review*, *8*(1), 1–7. https://doi.org/10.1080/17437199.2013.869710

Snijders, I., Wijnia, L., Rikers, R. M. J. P., & Loyens, S. M. M. (2020). Building bridges in higher education : Student-faculty relationship quality, student engagement, and student loyalty. *International Journal of Educational Research*, *100*, 101538. https://doi.org/10.1016/j.ijer.2020.101538

Steenberghs, N., Lavrijsen, J., Soenens, B., & Verschueren, K. (2021). Peer effects on engagement and disengagement: Differential contributions from friends, popular peers, and the entire class. *Frontiers in Psychology*, *12*, 726815. https://doi.org/10.3389/fpsyg.2021.726815

Talwar, A., Magliano, J. P., Higgs, K., Santuzzi, A., Tonks, S., O'Reilly, T., & Sabatini, J. (2023). Early academic success in college: Examining the contributions of reading literacy skills, metacognitive reading strategies, and reading motivation. *Journal of College Reading and Learning*, *53*(1), 58-87. https://doi.org/10.1080/10790195.2022.2137069

Thomas, L. (2020). Excellent outcomes for all students: A whole system approach to widening participation and student success in England. *Student Success*, *11*(1), 1-11. https://doi.org/10.5204/ssj.v11i1.1455

Thomas, C. L., & Tagler, M. J. (2019). Predicting academic help-seeking intentions using the reasoned action model. *Frontiers in Education, 4(*59). https://doi.org/10.3389/feduc.2019.00059.

Tinto, V. (2012). Enhancing student success: Taking the classroom success seriously. *The International Journal of the First Year in Higher Education*, *3*(1). 1–8. https://doi.org/10.5204/intjfyhe.v2i1.119

Trautwein, C., & Bosse, E. (2017). The first year in higher education—critical requirements from the student perspective. *Higher Education*, *73*(3), 371-387. https://doi.org/10.1007/s10734-016-0098-5

Virat, M., Shankland, R., & Huart, J. (2025). Factors Influencing Teachers' Intentions to Provide Emotional Support to Students: Insights From the Theory of Planned Behavior. *Psychology in the Schools, 63*(2), 389-406. https://doi.org/10.1002/pits.70099

von Haeften, I., Fishbein, M., Kasprzyk, D., & Montano, D. (2001). Analyzing data to obtain information to design targeted interventions. *Psychology, Health & Medicine*, *6*(2), 151–164. http://doi.org/10.1080/13548500125076

Walker, J. P., & Gonsier-Gerdin, J. (2023). Using the Theory of Planned Behavior to understand dispositional gatekeeping behaviors of clinical supervisors. *Rural Communication Educator Journal, 4*(1), 1-12. https://doi.org/10.4148/2994-4006.73806

Webb, T. L., & Sheeran, P. (2006). Does changing behavioral intentions engender behavior change? A meta-analysis of the experimental evidence. *Psychological Bulletin, 132*(2), 249–268. https://doi.org/10.1037/0033-2909.132.2.249

Weuffen, S., Fotinatos, N., & Andrews, T. (2021). Evaluating sociocultural influences affecting participation and understanding of academic support services and programs (SSPs): impacts on notions of attrition, retention, and success in higher education.

Journal of College Student Retention: Research, Theory & Practice, *23*(1), 118–138. https://doi.org/10.1177/1521025118803847

Winograd, G., & Rust, J. P. (2014). Stigma, awareness of support services, and academic help-seeking among historically underrepresented first-year college students. *Learning Assistance Review*, *19*(2).

Woods, C. S., Park, T., Hu, S., & Bertrand Jones, T. (2019). Reading, writing, and english course pathways when developmental education is optional: Course enrollment and success for underprepared first-time-in-college students. *Community College Journal of Research and Practice*, *43*(1), 5–25. https://doi.org/10.1080/10668926.2017.1391144

Yeats, R., Reddy, P., Wheeler, A., Senior, C., & Murray, J. (2010). What a difference a writing centre makes: A small scale study. *Education+ Training*, *52*(6-7), 499-507. https://doi.org/10.1108/00400911011068450

Yu, E. C., Rosca, O., Andrade, H. L., Lui, A. M., & Bryer, J. (2025). Predictive validity evidence for a no-stakes, untimed, machine-scored diagnostic writing assessment. *Assessing Writing*, *66*, 100978. https://doi.org/10.1016/j.asw.2025.100978

Appendix

Table A1

Correlations between intention and attitudinal beliefs

Variables	1	3	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Intention	—																
2. Bridging gaps	.23*	—															
3. Lecturers' expectations	.19*	.41***	—														
4. Language skills	.24**	.50***	.42***	—													
5. Academic skills	.30***	.57***	.37***	.63***	—												
6. Pleasure of progressing	.28**	.49***	.29***	.37***	.58***	—											
7. Motivation determination	.27**	.47***	.32***	.47***	.55***	.70***	—										
8. Belief in success	.32***	.45***	.30***	.45***	.54***	.60***	.63***	—									
9. Feeling supported	.22*	.49***	.46***	.47***	.58***	.52***	.61***	.60***	—								
10. Wasted time	.11	.01	-.03	-.01	.05	.15	.11	.17	-.01	—							
11. Less time for other courses	.19*	-.01	.04	-.02	-.05	-.03	.07	.14	.04	.56***	—						
12. Less time for other life areas	.10	-.12	-.01	-.18*	-.20*	-.16	-.05	.06	-.08	.23**	.41***	—					
13. Fatigue	.01	.08	.12	.01	.08	.03	.16	.14	.07	.21*	.28***	.50***	—				
14. Boredom	-.01	.10	.06	.17	.12	.16	.19*	.13	.16	.36***	.47***	.20*	.35***	—			
15. Stress	.06	.01	-.08	-.02	-.04	-.17	-.09	-.07	-.01	.11	.28***	.33***	.51***	.42***	—		
16. Feeling inferior	-.08	-.20*	-.02	-.09	-.27**	-.19*	-.16	-.27**	-.29***	.05	.20*	.36***	.26**	.28***	.39***	—	
17. Lacking university requirements	.05	-.29***	-.13	-.13	-.20*	-.16	-.16	-.16	-.32***	.25**	.32***	.35***	.22*	.20*	.37***	.54***	—
18. Showing one's efforts	.12	.22**	.13	.23**	.28***	.16	.06	.24**	.31***	.04	-.12	-.15	-.17	.01	-.09	-.21*	-.19*

Table A2

Correlations between intention and descriptive normative beliefs

Variables	1	2	3	4	5	6
1. Intention	—					
2. Students who want to learn more	0.28**	—				
3. Studious, hardworking students	0.25**	0.55***	—			
4. Struggling or failing students	-0.06	0.02	0.03	—		
5. Students lacking self-confidence	-0.06	-0.05	-0.02	0.53***	—	
6. Students missing prerequisites	-0.10	-0.08	-0.12	0.63***	0.52***	—
7. Students worried about success	-0.14	-0.14	0.01	0.31***	0.32***	0.39***

Table A3

Correlations between intention and PBC beliefs

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Intention	—													
2. Course uselessness	0.12	—												
3. Busy schedule	0.18	0.15	—											
4. Fixed class times	0.18*	-0.17	0.20*	—										
5. Extra commuting	0.04	0.24**	0.38***	-0.04	—									
6. Enjoyable format	0.38***	0.05	0.14	0.05	0.05	—								
7. Detailed program online	0.08	-0.10	-0.15	0.10	-0.09	0.16	—							
8. Links to other courses	0.21*	-0.08	-0.10	0.22*	0.00	0.38***	0.51***	—						
9. Personalized course	0.17	0.02	-0.13	0.17	-0.01	0.33***	0.32***	0.64***	—					
10. Friendly, welcoming atmosphere	0.30***	-0.04	-0.13	0.03	-0.02	0.49***	0.19*	0.49***	0.62***	—				
11. Time-consuming job	0.078	0.17	0.41***	0.26**	0.35***	0.18*	-0.07	-0.05	0.036	0.04	—			
12. Evening scheduling	0.11	0.01	0.23*	0.13	0.32***	0.21*	-0.18*	-0.02	-0.02	0.02	0.24**	—		
13. Procrastination tendency	0.09	0.16	0.21*	0.07	0.07	0.05	0.02	-0.11	-0.06	-0.03	0.14	0.04	—	
14. Confidence in success	0.12	-0.01	0.03	0.09	-0.01	0.31***	0.20*	0.18	-0.01	0.14	0.07	0.08	-0.08	—
15. Already competent	0.18*	-0.08	0.07	0.18	0.03	0.13	-0.03	-0.02	-0.08	0.03	0.14	0.20*	-0.09	0.57***

Table A4

Collinearity of attitudinal beliefs

Belief about	VIF	Tolerance
Bridging gaps	1.66	0.604
Lecturers' expectations	1.38	0.727
Language skills	1.86	0.538
Academic skills	2.37	0.422
Pleasure of progressing	2.41	0.414
Motivation determination	2.54	0.393
Belief in success	2.20	0.455
Feeling supported	2.14	0.468
Less time for other courses	1.13	0.884

Table A5

Collinearity of PBC beliefs

Belief about	VIF	Tolerance
Fixed class times	1.09	0.922
Enjoyable format	1.38	0.724
Links to other courses/curriculum	1.45	0.691
Friendly, welcoming atmosphere	1.58	0.634
Being already competent in analysis, structuring, argumentation, and writing	1.05	0.953

Table A6

Exploratory factor analysis – Attitudinal beliefs

	Factors		
Belief about	1	2	Unicity
Bridging gaps		0.602	0.517
Lecturers' expectations		0.598	0.683
Language skills		0.818	0.433
Academic skills		0.666	0.341
Pleasure of progressing	0.784		0.382
Motivation determination	0.867		0.283
Belief in success	0.715		0.414
Feeling supported	0.438		0.430
Less time for other courses			0.986

Note. The minimum residual extraction method was used with an oblimin rotation. RMSEA = 0.06, TLI = 0.96, $\chi^2(19) = 28.3$, $p = 0.08$.

Fig. A1

Screeplot of the AFE

