Freshmen's intention to engage in faculty mentoring: applying the theory of planned behavior

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Abstract

While faculty to freshmen mentoring (FFM) has been shown to benefit freshmen, not all of them wish to engage in such a program when entering higher education. This questionnaire survey ($N = 551$) built on the theory of planned behavior to investigate the determinants of freshmen's intention to engage in a large-scale FFM program called POLLEM. Results showed that general factors were at work, as well as factors specific to mentoring and to FFM in particular. They revealed that freshmen's experiential attitude, descriptive norm, injunctive norm and perceived ability mattered and highlighted key underlying beliefs (e.g. mentoring boosts self-esteem, shyness impedes engagement) as playing a major role. This study therefore confirmed the relevance of the TPB for understanding/studying the decision to engage in mentoring and for designing interventions likely to boost it.

Keywords:

Faculty mentoring

Mentoring engagement

Freshmen

Theory of planned behavior

Higher education

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Introduction

Transition to higher education (HE) is a complex process whose success is a challenge (Kift, 2015). While admitting increasingly diverse student cohorts with varying academic entry standards, colleges have developed increasingly diverse support programs in which, regretfully, students do not necessarily engage (Bornschlegl, Meldrum, & Caltabiano, 2020). Among academic support programs, faculty to freshmen – first year students – mentoring (FFM) has been shown to be a prime facilitator of transition (e.g. Larose, Tarabulsy, & Cyrenne, 2005) and to foster perseverance and success (e.g. Campbell & Campbell, 1997; Sneyers & De Witte, 2018). However, as for other support programs, some students have shown reticence to engage in mentoring when entering HE (e.g. Larose et al., 2009). Identifying levers or barriers to freshmen's engagement could therefore guide attempts to overcome reticence and soothe students' transition. This paper contributes to better knowledge of these levers and barriers by inspecting the determinants of freshmen's intention to engage in FFM through the lens of the theory of planned behavior (TPB; Ajzen, 1991, 2020).

Potential determinants of freshmen's engagement in FFM

To the best of our knowledge, no research has specifically studied the factors determining freshmen's willingness to engage in FFM programs. We thought it might be interesting to find out whether these are the factors that prevail in the lack of engagement in success support programs in general, or whether some of them are specific to mentoring and, even more so, to faculty to student mentoring. It might also be relevant to identify whether these factors are common to all students or specific to first-year students. For example, it could be that students entering HE, happy to finally have some autonomy, may not want a

professor to give them an opinion on what they are doing or should be doing. Identifying the factors involved would help to identify what needs to be taken into account when developing FFM programs, if the greatest number of first-year students are to participate.

Engagement in academic support programs in general

According to Plumat and his colleagues of the AdAPTE-group (a research group specifically dedicated to freshmen support programs), students' erroneous representations of HE and of their own competence can hinder their engagement in any kind of support program. These programs will benefit by being optimally organized in terms of schedules and information and by 'dangling the carrot' of proximal benefits. Moreover, the words chosen to name these programs (e.g. 'support programs') and their optional nature matter as they can induce a fear of stigmatization among supported students (Plumat et al., 2012). Other people's influence has also been found to be important; for example, Weuffen, Fotinatos, and Andrews (2021) highlighted the power of peer relationships in encouraging engagement, and Bornschlegl, Meldrum, and Caltabiano (2020) evidenced an impact of social norms on college students' help-seeking in general. Moreover, Bornschlegl and colleagues' scoping review of 168 studies showed the impact of past help-seeking experience and attitudes on general help-seeking, and that of age and extroverted personality on academic help-seeking in particular. Importantly, the authors concluded that academic help-seeking was also impacted by context-dependent factors.

Engagement in mentoring

In the context of mentoring, several explanatory theories of human behavior have been mobilized to understand and study mentors-mentees relationships, their development and their benefits. For example, according to work mobilizing the Social Exchange Theory (SET, Blau, 1964), people engage in mentoring relationships if they believe that the benefits will outweigh the costs (e.g. Tilooby, Cunningham, Lowell, & McCarthy, 2023). According to work

inspired by Bandura's Social Cognitive Theory (SCT) (Bandura, 1986), self-efficacy and outcome expectations emanating from past experiences, vicarious learning, emotional arousal and social persuasion, are keys to willingness to participate in mentoring (e.g. Lall, Chen, & Mason, 2023). According to work inspired by the Social Cognitive Career Theory (SCCT, Lent, Brown, & Hackett, 1994), which extends SCT to career choice and perseverance, the willingness to be mentored depends on the relationship with the mentor and has an impact on self-efficacy and outcome expectations that determine career interest, which in turn predicts one's intention to continue along this path (e.g. Pham et al., 2019). Also, considering mentoring through the lens of the Ecological Systems Theory (EST, Bronfenbrenner, 1994) invites to take into account, beyond ontogenic factors specific to mentees (e.g. personality), beyond the micro-system specific to mentoring (e.g. the mentor–mentee relationship, the organization of the mentoring program), the broader influence of meso- (e.g. department, university) and macro- (e.g. culture) systems in which individuals evolve on expectations building and on the willingness to participate (e.g. Chandler, Kram, & Yip, 2011).

While these theories have enabled to approach and understand mentoring relationships and their initiation, studies that have mobilized them have not necessarily been focusing on what, in mentees, *precedes* the decision to engage in mentoring. Indeed, while the barriers and levers to the decision to engage in mentoring have been fairly well studied among mentors (e.g. Aderibigbe, Holland, Marusic, & Shanks, 2022; Huart et al., 2022), mentees' point of view has been given less attention (Malen & Brown, 2020). Moreover, a number of studies have focused on the obstacles and levers to mentees' engagement in *ongoing* mentoring relationships. For example, Hayes (2005) evidenced time and schedule constraints, age mismatch, being assigned a non-chosen mentor, lack of common interests, mentor's precepting style, expertise and status. Status has also recently been identified by Aderibigbe, Holland, Marusic, and Shanks (2022), along with mentors' interest, values and motives,

information and communication. Li, Malin, and Hackman (2018) found that mentees deeply appreciate mentors who show themselves to be accessible, humble, caring, committed, supportive of mentees' needs, who demystify the codes of academia and provide psycho-social support. Wong, Soh, and Wong (2022) insisted on the importance of initiative taking, that can be lacking due to shyness, time or personal difficulties. In earlier studies, Rice and Brown (1990) found a negative impact of students' need for autonomy on their engagement in mentoring, and Kalbfleisch and Davies (1993) validated a model where communication competence and self-esteem predicted mentees' participation in academic mentoring.

Engagement in a FFM program in particular

The aforementioned mentoring studies were not specifically dedicated to faculty mentoring. It should be added that students may be impressed by faculty (Kaul, Ferguson, Yan, & Yanik, 2019). These studies did not necessarily concerned freshmen neither. However, some of the variables found, such as the need for autonomy and self-esteem, can be of prime interest for them. Because students' need for autonomy takes an inverted-U-shape during undergraduate studies (Rice & Brown, 1990) and self-esteem is threatened by first year experiences in HE (Kift, 2015; Shim, Ryan, & Cassady, 2012); both should be lower among freshmen entering HE than in any other student body. Freshmen represent a particular category of students as many of them discover 'a whole new world' (Yazedjian, Toews, Sevin, & Purswell, 2008) while entering HE, in which they simultaneously face personal, organizational, content-related and social challenges (Trautwein & Bosse, 2017) that have to be met for adapting and integrating themselves. Reflecting these transitional difficulties, freshmen display a greater fear of failure and test anxiety than older students (Brady, Hard, & Gross, 2018) and are more prone to anxiety, psychological and somatic distress, low self-esteem and depression (Gerdes & Mallinckrodt, 1994). Some of these characteristics could impact freshmen's decisions to engage in FFM, as was found by Larose et al. (2009) who

investigated newly-admitted college students' decisions to engage in *peer* mentoring. They found that, whereas mean attainment in high school was not associated with mentoring participation, volunteers were showing a greater fear of failure and test anxiety that are typical of freshmen. They also scored higher on two personality traits – Openness and Agreeableness, displayed more positive attitudes toward help-seeking from peers and teachers, and perceived more support from their peers. More recently, Weuffen, Fotinatos, and Andrews (2021) found that freshmen's participation in peer mentoring was motivated by a need for connectedness that is crucial for their retention.

From the general to the specific

The aforementioned literature seemed to indicate that some factors impacting freshmen's engagement in FFM could be common across programs and students' locations on the study path, while others should be typical of mentoring and even of faculty mentoring and/or of freshmen. For example, the general review by Bornschlegl, Meldrum, and Caltabiano (2020) and the study by Larose et al. (2009) on peer mentoring highlighted the impact of personality traits and attitudes to help-seeking. Alternatively, communication (Aderibigbe, Holland, Marusic, & Shanks, 2022; Kalbfleisch & Davies, 1993), self-esteem (Kalbfleisch & Davies, 1993) and shyness (Wong, Soh, & Wong, 2022) should be especially relevant for mentoring due to its relational nature, as well as mentors' accessibility, caring and psycho-social support (Li, Malin, & Hackman, 2018). Some of these variables could also be more significant for faculty than for peer mentoring, as mentors' status has been found to play a role (Aderibigbe, Holland, Marusic, & Shanks, 2022; Hayes, 2005). Also, the demystification of HE that mentors can provide (Li, Malin, & Hackman, 2018) should be particularly welcomed by newly-arrived students having erroneous representations of HE (Plumat et al., 2012) and displaying a lack of self-esteem (Gerdes & Mallinckrodt, 1994) and

an extended fear of failure (Brady, Hard, & Gross, 2018) that have been shown to impact mentoring engagement (Kalbfleisch & Davies, 1993; Larose et al., 2009, respectively).

Mentoring engagement through the lens of the theory of planned behavior

One theory that has so far not been widely used for understanding and studying mentoring, but which may be of particular interest in understanding determinants of the decision to engage in such a program, is the TPB. In the context of mentoring in HE, to our knowledge, it had until recently only been used to study students' intention to mentor young people (Barnard-Brak, Burley, & Crooks, 2010). Recently however, we relied on it to study the determinants of faculty's intention to enter FFM (Huart et al., 2022). Since then, Marabesi, Kelsey, and Ajayi (2023) also mobilized it as a framework for understanding the mentoring of graduate students by professionals.

In our view, the TPB was relevant for studying freshmen's intention to engage in FFM for five reasons. First, it embraces many of the factors of the aforementioned theories (see below). Second, it has been used to understand, more broadly, participation in success support programs (e.g. Bornschlegl, Meldrum, & Caltabiano, 2020). Third, it enables *anticipatory* understanding of what predicts ones' behavior. Fourth, it guides the implementation of interventions aimed at fostering the behavior under study (e.g. von Haeften, Fishbein, Kasprzyk, & Montano, 2001). Finally, since we had already used it to study mentors' intention to engage in FFM, its use with freshmen would allow us to bring the two perspectives together in a single framework.

Ajzen (1991, 2020) developed the TPB to identify the determinants of intended behaviors and to foster/reduce positive/negative ones. According to the TPB, performing a planned behavior is directly predicted by people's *intention* to endorse it. This intention is itself determined by three *direct determinants*, each covering two aspects:

1. *Attitude,* or the evaluation people make about endorsing the behavior. This is *instrumental* by evaluating the outcomes of behavior as well as *experiential* by considering affective states experienced while performing the behaviour.
2. *Subjective social norm,* or the social norm that people perceive. This is *descriptive* by considering what others do as well as *injunctive* by considering others' expectations.
3. *Perceived behavioral control*, or people's evaluation of how easy it would be to adopt the behavior. This refers to their perceived *ability* and *autonomy* in performing it. Note that in addition to being a determinant of intention, perceived behavioral control also directly predicts behavior.

Each of these predictors, in turn, comes from a set of underlying beliefs. In such, intention emanates directly from its 'direct' determinants and indirectly from the set of beliefs that underlie them or 'indirect determinants'. The strength of these beliefs and the importance people attach to them (or 'power') vary according to past behavior, individual differences and context in the broadest sense. It is important to note that a high intention to adopt a behavior does not warrant its adoption (see Ajzen, 1991). Hence, the higher the intention, the higher the probability of its concretization into behavior. Although the TPB has been criticized in papers (e.g. Sniehotta, Presseau, & Araújo-Soares, 2014) that were challenged in return (e.g. Ajzen, 2015), one reason for its success lies in its impressive predictive power: a meta-analysis showed that the direct determinants explain 39% of the variance of intention and 27% of the variance of behavior (Armitage & Conner, 2001).

Building on the TPB, engaging or not in FFM should come from freshmen's *intention* to engage in FFM. This intention should result from 1) freshmen's *attitude* that comes from beliefs about the outcomes and experience of FFM, 2) freshmen's *social subjective norm*, resulting from beliefs about mentees and about people expecting them to engage (or not) in FFM, and 3) freshmen's *perceived behavioral control* that reflects beliefs about their own

ability and autonomy to engage in such a program. These beliefs should vary according to freshmen's experience, individual differences and context. Note that such a conceptualization encompasses notions that come closest to those of cost–benefit ratio (attitude), outcomes expectancies (instrumental attitude), self-efficacy (perceived ability, see Ajzen, 2002), personal factors (past experience, individual differences), micro-meso-macro systems (context in the broadest sense) and others' influence (subjective social norm) of the aforementioned theories (SET, SCT, SCCT and EST). In addition, it considers affective states (experiential attitude), that can be important in relational programs and have recently been shown to be a better predictor of intention than their instrumental counterpart (instrumental attitude) when both aspects of attitude are considered separately (La Barbera & Ajzen, 2022). Finally, it addresses not only students' beliefs, but also how important they are to them.

Research questions and hypothesis

In this paper, we relied on the TPB to address freshmen's intention to engage in an FFM program at the onset of their studies, in assessing two research questions.

RQ1:What are the determinants of freshmen's intention to engage in FFM? Considering findings from Bornschlegl, Meldrum, and Caltabiano (2020) about attitude and social norms, and Armitage and Conner's (2001) meta-analysis, we hypothesized that freshmen's attitude, social subjective norm and perceived behavioral control would predict their intention to engage in FFM.

RQ2:Which underlying beliefs play a role in freshmen's intention to engage in FFM? This research question was undertaken in an exploratory manner to identify beliefs that impact freshmen's engagement in FFM.

Methods

Research context and participants

In the Wallonia-Brussels Federation (WBF) of Belgium, nine HE institutions of the Liège-Luxembourg academic hub have developed a broad FFM program named POLLEM (an acronym in French of Liège-Luxembourg academic hub mentoring experience, see Huart et al., 2022 for more details). While this program echoes a large study conducted among WBF graduates and evidencing how they need a benevolent and expert supportive figure during undergraduate studies (Mouhib, 2018), it did not create a great deal of enthusiasm amongst freshmen for its first edition. Consequently, the partner institutions aimed to identify ways of encouraging more students to take part in the program during its second iteration and subsequent ones.

The questionnaire was submitted to freshmen entering HE in the partner institutions. We obtained 551 responses. For each question, participants were free to answer or not. Unexpectedly, some students pretesting the questionnaire criticized 'personal questions', particularly about gender (e.g. 'an out-of-date social construct'). To avoid any polemics, socio-demographic questions were removed, including age, which, since participants were entering HE, was, with rare exceptions, 18. Of the two items asking for their institution and study choice, most participants ($N = 354$) omitted the second one, which may indicate, among students unfamiliar with the scientific approach, a fear that personal questions would not respect their anonymity despite the guarantees provided.

Procedure and instrumentation

In addition to having developed the TPB conceptual framework, its author provided a detailed procedure for TPB studies containing three steps, as well as questions and items adaptable to the behavior under study (Ajzen, 2006). First, we precisely defined the behavior in terms of its target, action, context, and time elements as 'engaging in FFM this year in my institution'. Second, before the academic year began, we performed a qualitative pre-assessment (also called pilot work by Ajzen, 2002) identifying relevant beliefs via predefined

open questions (see appendix A, Table A1) in a sample of the target population composed of 25 students registering for the first time in participating institutions. Answers were submitted to a content analysis and 32 beliefs mentioned at least twice were retained. Third, we constructed the TPB questionnaire (see Appendix A, Table A2) composed of 'indirect measures' measuring the strength of the 32 beliefs and their importance for participants (power), as well as 'direct measures' measuring intention and its direct determinants on 7-point Likert scales. The items were encoded in Qualtrics and sent by e-mail to the participants shortly after the start of the academic year, before they were offered the chance to enrol in the program. Note that, because this study has been conducted with the aim of boosting student engagement, partner institutions made immediate adjustments based on the results, making it impossible to study the link between initial beliefs/intention and behavior in this context. Figure 1, Appendix A illustrates the research process.

Ethical considerations

This research obtained the approval of the POLLEM scientific committee. Participants were informed that their participation was anonymous, that they were free to participate or not and to terminate their participation whenever they wanted to and without any justification.

Statistical approach

Jamovi statistical software was used to conduct the analyses, carried out on the maximum amount of available data. Following Ajzen (2006), the strength of each belief was weighted (multiplied) by its power. We computed a Pearson correlation for both items measuring participants' intention to engage in FFM. In order to check whether each direct determinant was to be considered as a whole or as two distinct aspects, we carried out exploratory factorial analyses (EFAs) with minimum residual extraction method and oblimin rotation. Variables were created by calculating the mean of their respective items. We

additionally ran an ANOVA in order to check that participants' intention to engage in FFM did not vary across institutions.

The five-step analytical strategy proposed by von Haeften, Fishbein, Kasprzyk, and Montano (2001) was adopted, with a slight modification in step 5. First, the 'correlational analysis' checked the relevance of the TPB model by computing Pearson correlations between 1) intention and its direct determinants, 2) each direct determinant and the mean of the weighted beliefs underlying it (Mwb) and 3) intention and its indirect determinants (or Mwbs). Second, the 'direct determinant regression analysis' identified direct determinants that made an independent contribution to the understanding of intention, by regressing intention on the direct determinants that correlated with intention in step 1. Third, the 'individual indicator analysis' identified, via regression analyses conducted separately for each direct determinant that reached significance in step 2, which of its underlying weighted beliefs made an independent contribution to the understanding of intention. Only weighted beliefs significantly correlated with intention were included as predictors. Fourth, the 'identifying critical targets' step identified key weighted beliefs via a regression analysis explaining intention by the weighted beliefs that stood out in step 3. For each significant one, we computed separate Pearson correlations between its strength and power measures and intention to determine whether it was the strength of the belief or its power that mattered the most. Fifth, the 'Identifying alternative targets step' examined how beliefs were inter-connected to identify those that were related to intention but did not reach significance in step 4 due to their correlation with the key beliefs. von Haeften, Fishbein, Kasprzyk, and Montano (2001) content analysed the beliefs and associated them to conceptual themes. Alternatively, we used EFAs with minimum residual extraction method and oblimin rotation so that groupings emerged from the data.

Results

Preliminary analyses and variables computation

As shown in Table 1, EFAs extracted two factors for each direct determinant of intention, which corresponded to the aspects described by the theoretical model: instrumental and experiential attitudes, descriptive and injunctive social norms, perceived ability and autonomy. One item measuring descriptive norm loaded on both normative factors. This could be explained by the fact that this item mentioned 'people important to me', as did one measuring injunctive norm (see Appendix A, Table A2, direct measures). Because the two descriptive items corresponded to Ajzen's definition, and because he himself wrote them to measure this construct, we nevertheless combined them to construct the corresponding variable but repeated the step 2 analysis with the single item that loaded only on factor 2. The Pearson correlations for pairs of items measuring intention ($r = .776$, $p < .001$), instrumental attitude ($r = .744$, $p < .001$), experiential attitude ($r = .653$, $p < .001$), descriptive norm ($r = .088$, $p = .046$), injunctive norm ($r = .546$, $p < .001$), perceived ability ($r = .643$, $p < .001$) and autonomy ($r = .445$, $p < .001$) were significant. We merged pairs measuring each construct to create eponymous variables. Descriptive statistics are presented in Appendix B, Table B1. Intention did not vary across institutions ($F < 1$).

Step 1: the correlational analysis

As shown in Table 2 (note that Table 2 displays significant results, full results are presented in Appendix B, Table B3), freshmen's intention to engage in FFM was significantly correlated with each of its direct and indirect determinants (all *P*s < .001). Each direct determinant was significantly correlated with its corresponding set of underlying beliefs (Mwb, all *P*s < .001 except that relating to the descriptive norm, $p = .006$).

Step 2: the direct determinant regression analysis

Participants' intention to engage in FFM was predicted by its direct determinants ($F(6,491) = 98.11$, $p < .001$, *adjusted*-$R^2 = .54$). Four of them made independent contributions

to the understanding of intention: experiential attitude, both descriptive and injunctive norms, and perceived ability (see Table 2). The same results were obtained when the descriptive norm variable was replaced by the unique strictly descriptive item (see Appendix B, table B3).

Step 3: the individual indicator analysis

Correlations between intention and the weighted beliefs underlying its direct determinants are provided in Appendix B (Table B2). Weighted beliefs about study time, additional journeys, students doubting their study choice, students considering mentoring as shameful and free time did not significantly correlate with intention and were excluded from the analyses. As shown in Table 2, regressing intention on the weighted attitudinal beliefs ($F(9,475) = 12.80$, $p < .001$, *adjusted*-$R^2 = 0.18$) revealed that those about self-esteem, motivation and career information reached significance. Surprised by the negative beta of the third belief which nevertheless correlated positively with intention (Appendix B, Table B2), we repeated the analysis, entering the IVs one by one. It appeared that the beta of this belief was positive as long as self-esteem and motivation beliefs were not included in the model, but changed direction once they were added. Regressing intention on the weighted beliefs underlying descriptive norm ($F(4, 502) = 12.05$, $p < .001$, *adjusted*-$R^2 = 0.08$) showed that those concerning bright students, diligent students and those doubting their study choice reached significance. The regression of intention on the weighted beliefs underlying injunctive norm ($F(3, 507) = 13.64$, $p < .001$, *adjusted*-$R^2 = 0.07$) showed a significant effect of those concerning parents' and sophomores' opinions. Finally, the regression of intention on weighted beliefs underlying perceived behavioral control ($F(11, 454) = 6.51$, $p < .001$, *adjusted*-$R^2 = 0.11$) evidenced an impact of those about shyness, mentors' concern and ease of sign-up.

Step 4: identifying the critical targets

The regression of intention on the 11 weighted beliefs identified in step 3 ($F(11,457) = 13.58$, $p < .001$, *Adjusted*-$R^2 = .23$) showed that those relating to self-esteem, motivation, career information, bright students and shyness made independent contributions to the explanation of intention, which designated them as 'key beliefs'. Once again, the beta of the belief about career information was negative. As shown in Appendix B (Table B2), Pearson correlations between intention and the strength and power of these beliefs were significant (all Ps < .01), with one exception: intention did not correlate with the strength of the belief about mentees' shyness.

Step 5: identifying alternative targets

EFAs reported in Table 1 showed which beliefs were associated with the key beliefs identified in step 4. Attitudinal beliefs about self-esteem and motivation were associated within a factor that also included beliefs about adapting to HE and dropping out less. Self-esteem did also load on a second factor comprising beliefs about reassurance and support figure. The belief about career information was associated with those about rapid confirmation of study choice and curriculum information. The normative belief about bright students was associated with the one about diligent students. The control belief about shyness was associated with the one about being impressed by faculty.

Additional results

EFAs (Table 1) additionally evidenced associations between beliefs about 1) study time and additional journeys; 2) students doubting their study choice, having difficulties and lacking self-esteem; 3) parents' and friends' opinions; 4) anticipated poor grades and self-esteem; 5) free time, public transportation and anticipated poor grades; 6) videoconferencing, mentors' availability, mentors' concern and 1-on-1 meetings; 7) information clarity and ease of sign-up.

Discussion

The present study investigated freshmen's intention to engage in FFM through the lens of the TPB (Ajzen, 1991, 2020).

Experience, other people and perceived ability are keys to freshmen's engagement

The first research question addressed the determinants of freshmen's intention to engage in FFM. Confirming the relevance of the TPB, a large part (54%) of the variance of this intention was explained by the direct determinants proposed by the theory. Our hypothesis that each of them would be implied has been partially encountered as both normative aspects but only one of those of attitude and perceived behavioral control, namely experiential attitude and perceived ability, had an independent impact. These results confirm those showing an impact of *attitude* in academic help-seeking in general (Bornschlegl, Meldrum, & Caltabiano, 2020) and in engagement in peer mentoring (Larose et al., 2009). They also echo studies relying on the SET that have shown an effect of a cost–benefit ratio akin to attitude (e.g. Tilooby, Cunningham, Lowell, & McCarthy, 2023). However, along with La Barbera and Ajzen (2022), they invite separate scrutiny of the instrumental and experiential aspects of attitude: experience expectations appeared to be more important than outcomes expectations though frequently evidenced by works mobilizing the SCT and the SCCT (e.g. Lall, Chen, & Mason, 2023; Pham et al., 2019). Regarding the impact of *social norms*, the results once again confirm those obtained in the context of general academic help-seeking (Bornschlegl, Meldrum, & Caltabiano, 2020). Together with the effect of students' *perceived ability*, these findings also echo studies relying on the SCT and the SCCT that showed an influence of what others do and think and of self-efficacy on mentoring engagement (e.g. Pham et al., 2019).

Key beliefs from various themes

The second research question aimed to identify the beliefs most decisive in freshmen's intention to engage in FFM. Five key beliefs as well as related beliefs from as many themes have been identified.

FFM as a vector of self-esteem and motivation

Confirming the impact of self-esteem in mentoring engagement (Kalbfleisch & Davies, 1993), a first key belief is that FFM would boost self-esteem. A second one, that may evoke findings that intrinsic motivation is lower at the beginning of higher studies (Isiksal, 2010), is that FFM would boost motivation. These results go along with the observation by Plumat et al. (2012) that proximal benefits, not only distal ones, motivate freshmen's engagement in support programs. Both beliefs were associated with those according to which FFM would facilitate adaption to HE and reduce drop out. We think that together, these four beliefs could evoke the theme of 'perseverance' defined by Roland, De Clercq, Dupont, Parmentier, and Frenay (2015) as adopting and maintaining commitment to studies regardless of the obstacles. Students also associated the belief about self-esteem to those according to which FFM would bring reassurance and a support figure. The latter echoes mentees' claims that mentors' psycho-social support is important in ongoing mentoring relationships (Li, Malin, & Hackman, 2018). Since the belief about self-esteem was also associated with the theme of perseverance, we reasoned that the second theme relates to 'affective security' or 'secure attachment' as it echoes studies addressing mentoring in light of attachment theory (e.g. Larose, Tarabulsy, & Cyrenne, 2005), that showed how mentors convey feelings of affective security that facilitates freshmen's adaptation. It should be noted that the notions of perseverance and affective security have been found to be particularly relevant for freshmen having to adapt to a 'whole new world' (Yazedjian, Toews, Sevin, & Purswell, 2008) and being particularly at risk of dropping out (Kift, 2015).

Career information need further examination

A third key belief is that FFM would provide career information. It was associated with beliefs according to which FFM would provide curriculum information and foster a rapid confirmation of study choice, which seems to evoke the theme of ‘certainty of study choice’ (e.g. Bartolini, Goodrich, & Meyers, 2021). The fact that the beta of this third key belief was negative in the presence of those about self-esteem and motivation is puzzling. This could be an aberrant result that will never be replicated. Alternatively, it could indicate that, if freshmen are assured of finding a reinforcement of their self-esteem and motivation in the program, obtaining career information would appear unappealing. As results show that mentoring outcomes seemed to count for less than the affective states FFM can induce, this question merits closer examination.

A dichotomous representation of peers

A fourth key belief concerns bright students. It was associated with the belief about diligent students, evoking the theme of ‘good students’. A glance at the means (Appendix B, Table B2) reveals that freshmen see mentees less as ‘good students’ than as students with a less favorable profile, who are also associated with each other. This result appears to be consistent with the idea that participating in support programs can elicit in freshmen the fear of being assimilated to students with whom they identify little and of being stigmatized (Plumat et al., 2012).

Shyness has less impact than believing it does

A final key belief concerns the role of shyness on mentoring engagement. Students associated it with the belief about being impressed by teachers, which evokes the theme of ‘discomfort’. This is not surprising in the case of a relational program where shyness (Wong, Soh, & Wong, 2022) has been shown to matter, especially when mentors are faculty who can be impressive (Kaul, Ferguson, Yan, & Yanik, 2019) and for freshmen lacking self-esteem (Shim, Ryan, & Cassady, 2012). However, our results showed that it was not so much how

shy students are that matters, but rather seeing shyness as a limiting factor. About limiting factors, we deem it important to point out that, in this study as in the one conducted amongst mentors (Huart et al., 2022), one factor considered to be crucial in the literature, time (e.g. Hayes, 2005; Marabesi, Kelsey, & Ajayi, 2023; Wong, Soh, & Wong, 2022), has not been identified as such at the end of the (quantitative) approach mobilizing the TPB. Could it be that, controlling for other factors, time itself would no longer be an issue? This, too, merits further investigation.

Actors' and organizational specificities are associated in freshmen's representations

Although none of the remaining beliefs studied here have been identified as key ones, examining their associations provides insight into the cognitive foundation of freshmen's perceptions. The association between attitudinal beliefs that FFM would leave less time to study and require additional journeys echoes the association found between beliefs that anticipating poor grades, having time and taking (time costing in this context) public transportation are complicating/facilitating factors. It could be that students anticipating poor grades and experiencing performance anxiety – as freshmen typically do (Brady, Hard, & Gross, 2018) – fear to invest time in FFM (and journeys) at the cost of time dedicated to studying, what would contradict the results of Larose et al. (2009) but be consistent with ours. Another association have been found between thinking that 1-on-1 meetings and videoconferencing are possible and that mentors would be available and concerned. It could be that both organizational options signal mentors' sought-after characteristics. In line with the EST (Bronfenbrenner, 1994), these results could indicate that mentoring organization interacts with mentors' and mentees' attributes and that organizational flexibility could suit the greatest number of students' needs to foster engagement.

Contribution to mentoring research and theories

To the best of our knowledge, this study is the first to investigate what leads freshmen to want to engage in FFM. Moreover, it relied on the TPB which, although used in many domains including students' engagement in support programs (Bornschlegl, Meldrum, & Caltabiano, 2020), has until recently rarely been used for studying HE mentoring issues. Results indicate that a mix of factors found across programs and populations (e.g. attitudes, social norms) and others specific to faculty mentoring and to freshmen (e.g. being impressed by faculty, low self-esteem) determined freshmen's intention to engage in FFM. As such, they suggest that research about mentoring engagement should consider both general (support programs) and specific (the type and target of mentoring) aspects. While the findings are generally in line with those of studies based on theories more frequently used in mentoring research, they call for a greater consideration of experience expectations as well as for a closer examination of beliefs about factors whose impact seems obvious (time, one's shyness) and of the way in which beliefs are associated in students' representations. Also, they call for an integration of the TPB among the theories mobilized to study mentoring relationships or, at the very least, their initiation.

Contributions for mentoring developers

Identifying the determinants of freshmen's intention to engage in FFM means identifying its levers. In the case of POLLEM and perhaps other programs (see Weuffen, Fotinatos, & Andrews, 2021), as mentoring had been conceptualized by support staff as a facilitator of student transition that promotes academic success, it had been presented as such to newly arrived students. This consideration focuses mainly, if not exclusively, on mentoring outcomes or instrumental attitude. Our results show that this aspect of attitude is of little importance when compared with other determinants that are more effective levers. Identifying key beliefs and, more broadly, important themes, make it possible to identify how to activate these levers. By further clarifying whether it is a belief per se or the value placed on it that

counts (von Haeften, Fishbein, Kasprzyk, & Montano, 2001), the results can serve as a guide to interventions aimed at increasing freshmen's intention to engage in FFM, which would consist in 1) emphasizing the extent to which FFM boosts self-esteem, motivation and more broadly security and perseverance, and how valuable both are, 2) highlighting bright and more broadly 'good students' who have been mentored to develop a positive representation of mentees and freshmen's identification with these students and 3) reassuring students, *whether shy or not*, about mentors' benevolence so that they stop believing that shyness or the impressiveness of faculty is a barrier to engagement in FFM.

Limitations and future directions

A first limitation, common in TPB studies, is that the impact of intention on behavior has not been measured for the pragmatic reasons mentioned above. A second limitation concerns the measure of descriptive norm, that we have tried to circumscribe by repeating the (step 2) analysis with the item that focused solely on the descriptive factor. A final limitation is that Ajzen's (2006) method does not permit questions raised by the results to be answered. Future research should replicate this study 1) with a measure of actual engagement in FFM, 2) with a more reliable measure of descriptive norm and 3) in paying particular attention to beliefs about time, shyness and career information. Two other avenues of research are 1) to further study the role of experience expectancies in mentoring engagement and 2) to examine students' representations and the way they are organized, to ascertain whether organizational flexibility could at least partly answer mentors or mentees' attributes in promoting students' engagement in mentoring.

Conclusion

Despite the recognized benefits of FFM for freshmen's success and perseverance (e.g. Campbell & Campbell, 1997; Sneyers & De Witte, 2018), freshmen can show reticence to engage in such programs (Larose et al., 2009), a problem shared by all academic support

programs in general (e.g. Bornschlegl, Meldrum, & Caltabiano, 2020; Plumat et al., 2012). Investigating the determinants of freshmen's intention to engage in FFM, our study shows that some factors are common across programs and populations while others are specific to mentoring and even to faculty mentoring and to freshmen. This paper calls for a deeper investigation of students' experience expectations and beliefs, and for a further examination of how organizational issues could be altered to promote freshmen's engagement in FFM.

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Supplementary material

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Table 1

Results of the EFAs computed for the direct and indirect determinants of freshmen's intention to engage in FFM

Direct determinants	**Factors**		***Indirect determinants (weighted beliefs)***	***Factors***				
	1	2		*1*	*2*	*3*	*4*	*5*
Attitude			Study choice certainty			.55		
Instrumental_1	.70		Curriculum information			.81		
Instrumental_2	.91		Support figure		.62			
Experiential_1		.64	Reassurance		.91			
Experiential_2		.84	Self-esteem	.43	.50			
			Adaptation	.40				
			Less dropout	.89				
			Motivation	.71				
			Career information			.67		
			Study time				.82	
			Journeys				.72	
Social subjective norm			*Descriptive referents*					
			Diligent students		.47			
Descriptive_1		.40	Bright students		.99			
Descriptive _2	.44	.31	Students in doubt	.70				
Injunctive_1	.75		Students in difficulties	.93				
Injunctive _2	.73		Students lacking self-esteem	.85				
			Injunctive referents					
			Parents	.61				
			Friends	.82				
			Sophomores		.62			
			Students considering mentoring as shameful			.42		
Perceived behavioral control			Shyness			.79		
			Impressed by faculty			.76		
Ability_1	.99		Free time				.46	
Ability_2	.62		Public transportation				.52	
Autonomy_1		.41	Anticipated poor grades				.37	-.32
Autonomy_2		1.0	Self-confidence					.64
			Videoconference	.35				
			Mentors' availability	.97				
			Mentors' concern	.68				
			1-on-1 meetings	.37				
			Information clarity		.93			
			Ease of sign-up		.74			

Note: Factor loadings > .3. Bartlet sphericity tests were significant (*ps* < .001). All *TLI*s were > .95.

Table 2

Steps 1 to 4 of the analytic strategy proposed by von Haeften et al. (2001)

1. Correlational analysis	2	3	4	5	6	7	8	9	10	11
1. Intention	.52	.66	.31	.34	.63	.18	.36	.24	.26	.30
2. Instrumental attitude		.73	ns	.27	.58	.25	.57	.28	.33	.53
3. Experiential attitude			.18	.29	.34	.23	.51	.31	.34	.48
4. Descriptive norm				.23	.14	ns	ns	.12	.11	ns
5. Injunctive norm					.29	ns	.13	.17	.45	.18
6. Perceived ability						.29	.48	.25	.31	.43
7. Perceived autonomy							.29	ns	ns	.28
8. Mwb attitude								.39	.29	.60

9. Mwb descriptive norm				.35	.38
10. Mwb injunctive norm					.32
11. Mwb perceived control					
2. Direct determinants analysis	***b***	***SE***	***IC***	***t***	***p***
Experiential attitude	0.55	0.07	0.42 ; 0.69	8.06	< .001
Descriptive norm	0.26	0.05	0.17 ; 0.36	5.47	< .001
Injunctive norm	0.11	0.04	0.03 ; 0.19	2.63	.009
Perceived ability	0.45	0.06	0.34 ; 0.56	8.05	< .001
3. Individual indicator analysis	***b***	***SE***	***IC***	***t***	***p***
a. Experiential attitude					
Self-esteem	0.02	0.01	0.01 ; 0.04	2.05	.041
Motivation	0.05	0.01	0.02 ; 0.07	4.27	< .001
Career information	-0.02	0.01	-0.04 ; -0.01	-2.03	.042
b. Descriptive norm					
Diligent students	0.02	0.01	0.01 ; 0.03	2.32	.021
Bright students	0.03	0.01	0.01 ; 0.05	3.60	< .001
Students lacking self-esteem	0.04	0.01	0.02 ; 0.07	3.16	.002
c. Injunctive norm					
Parents	0.02	0.01	0.01 ; 0.04	3.48	< .001
Sophomores	0.02	0.01	0.01 ; 0.03	2.30	.022
d. Perceived ability					
Shyness	0.03	0.01	0.01 ; 0.05	3.66	< .001
Mentors' concern	0.02	0.01	0.01 ; 0.05	2.03	.043
Ease of sign-up	0.02	0.01	0.01 ; 0.04	2.36	.019
4. Identifying the critical targets	***b***	***SE***	***IC***	***t***	***p***
Self-esteem	0.02	0.01	0.01 ; 0.04	2.45	0.015
Motivation	0.04	0.01	0.02 ; 0.05	3.96	<.001
Career information	-0.02	0.01	-0.04 ; -0.01	-2.57	.010
Bright students	0.02	0.01	0.01 ; 0.04	2.47	0.014
Shyness	0.02	0.01	0.01 ; 0.03	2.16	0.031

Note: Table 2 displays significant results, see Appendix B for complete results.