

Academic Self-Efficacy at the Onset of Tertiary Education

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Abstract

The transition to higher education is a pivotal period in students' academic lives, during which academic self-efficacy beliefs have been identified as a crucial factor in the adaptation process. The present study investigates patterns of study entry self-efficacy among first-year university students, with a special emphasis on differences between students in Hungarian-language programs at a regional Hungarian foundation-maintained university and students in English-language programs in Hungary. The data were collected through the SESW (Studieneinstiegsselbstwirksamkeit) questionnaire in an online self-administered survey. Quantitative analysis was performed to compare two SESW dimensions: Cognitive Challenges (kH) and Motivation and Cognitive Confidence (MuK). The results show that no statistically significant difference was observed between the two groups for kH, whereas students in English-language programs reported statistically significantly higher MuK self-efficacy. These findings describe group differences in the present sample and should be interpreted in light of the simultaneous differences in language of instruction and institutional context.

Keywords: academic self-efficacy; study entry; first-year students; higher education adaptation; SESW questionnaire

1. Introduction

The transition into higher education is one of the most challenging periods in students' educational careers, where cognitive, motivational, and self-regulatory demands arise concurrently. This stage is marked by a dramatic change in academic demands, a growing need for self-directed learning, and a need to adjust to a new academic setting. During this first stage, students form initial beliefs about their academic abilities, which have been found to be among the most influential psychological predictors of future academic achievement and persistence. Based on Albert Bandura's social cognitive theory (Bandura, 1977), self-efficacy beliefs are considered pivotal in determining learners' effort investment, persistence, and coping strategies when confronted with academic challenges. In the higher education setting, academic self-efficacy has been found to be consistently linked with effective learning strategies, resilience in the face of adversity, and successful academic adjustment. Therefore, the assessment of self-efficacy at the onset of university studies offers a unique perspective on students' ability to cope with academic demands prior to the emergence of performance outcomes.

The study of this initial phase is especially important in learning environments that are characterized by linguistic and institutional diversity. Students in English-medium programs in non-native environments are faced with double cognitive demands, as learning processes in

subject-specific disciplines are accompanied by continuous second language use. Moreover, these students are likely to be confronted with additional challenges in terms of cultural adaptation and unfamiliar institutional settings. In contrast, students in Hungarian-language programs in regional higher education institutions may be confronted with different kinds of academic challenges, for example, higher expectations concerning autonomous time management, self-regulated learning, and responsibility for academic progress. Academic self-efficacy is a context-dependent construct that is differently activated in learning environments and has differently strong effects on persistence, strategy choice, and academic achievement. Research in higher education underlines that contextual variables, such as language of instruction and institutional characteristics, can have a significant impact on the level of self-efficacy and its relationship with learning-related behaviors. Nevertheless, empirical evidence concerning these aspects at the very beginning of university studies in different linguistic and institutional environments is still scarce. In this context, the current study investigates how different facets of academic self-efficacy emerge given varying instructional language and institutional contexts during the early phase of higher education. By investigating first-year students, the current study aims to tap into self-efficacy perceptions prior to the stabilization of self-regulation processes and academic adaptation. Based on these, the following research questions and hypotheses have been formulated for the empirical investigation:

1.1. Research questions and hypotheses

Overarching RQ. What differences can be observed in the initial levels of academic self-efficacy across the two focal SESW dimensions (kH and MuK) among students learning in different linguistic and institutional contexts?

RQ1. Does the level of academic self-efficacy related to cognitive challenges differ between (a) students enrolled in English-language programs in Hungary and (b) students enrolled in Hungarian-language programs at a regional Hungarian foundation-maintained university?

RQ2. Does the level of academic self-efficacy related to motivation and prior knowledge differ between (a) students enrolled in English-language programs in Hungary and (b) students enrolled in Hungarian-language programs at a regional Hungarian foundation-maintained university?

H1. It is hypothesized that the level of academic self-efficacy related to cognitive challenges differs between students enrolled in English-language higher education programs in Hungary and students enrolled in Hungarian-language programs at a regional Hungarian foundation-maintained university.

H2. It is hypothesized that the level of academic self-efficacy related to motivation and prior knowledge differs between students enrolled in English-language higher education programs in Hungary and students enrolled in Hungarian-language programs at a regional Hungarian foundation-maintained university.

2. Literature review

2.1. Student Success in Higher Education

The success of students in higher education has long been acknowledged as a multidimensional concept that goes beyond the boundaries of academic achievement alone. The current state of research in higher education studies views success as a complex process that is influenced by the interaction of individual psychological factors, the learning environment, and the effectiveness of support systems within the institution (Schunk, 1995). Instead of being solely focused on academic achievement, student success is viewed as a process of academic progress, persistence, and institutional integration (Pajares, 1996). Academic achievement is perhaps the most visible and widely used indicator of student success. It is usually measured through grade point averages, credit accumulation, and examination performance. However, academic achievement is only one aspect of the overall concept of success. Beyond the surface level of achievement are the psychological and organizational processes that play a crucial role in influencing it. Research has repeatedly shown that academic achievement is not solely dependent on intelligence but also on motivational variables, self-regulated learning strategies, and academic self-efficacy (Waddington, 2023).

Another important aspect of student success is persistence, defined as the ability to stay enrolled and move towards completing a degree (Andrade et al., 2022). Dropout is a complex issue that can be affected by academic struggles, loss of motivation, financial and life circumstances, and a lack of support (Pusztai et al., 2022). From a psychological point of view, the role of early self-efficacy beliefs is crucial in persistence, as it influences students' perceptions of academic tasks as manageable or unmanageable. Students who believe they can handle the demands of higher education are more likely to stay engaged and persist in their studies despite obstacles (Godsk & Møller, 2025). A great deal of attention has been paid in the literature to the first phase of university studies, also known as the study entry phase. This phase is regarded as one of the most reliable predictors of long-term academic outcomes. During this phase, students establish learning habits, motivational styles, and emotional coping strategies that can influence their academic outcomes for several years (Li & Jackson, 2024). A successful transition requires the development of effective learning habits, time management, emotional stability,

and the ability to understand and respond to new academic demands. Obstacles during this initial phase often lead to decreased performance, disengagement, and finally dropout. In combination, these approaches emphasize that student success cannot be conceptualized exclusively in terms of outcome-oriented indicators. Rather, it needs to be explored as a process characterized by cognitive, motivational, and self-regulatory processes, especially during the transition to higher education. This process-oriented conceptualization of student success serves as the theoretical basis for exploring academic self-efficacy beliefs at the beginning of higher education.

However, student success cannot be solely ascribed to personal factors, as it is also strongly influenced by the level and quality of institutional support. The responsibility for the establishment of learning environments that facilitate student integration, reduce initial academic and organizational challenges, and foster the development of self-regulated learning strategies rests with higher education institutions (Molnár, 2012, 2013). These learning environments can be realized through the implementation of mentoring programs and learning support services, clear study pathways, readily available administrative support, psychological and counseling services, and an inclusive and supportive teaching environment. The effectiveness of support systems within institutions has a direct influence on the development of students' academic self-efficacy, approach to learning tasks (Gogh et al., 2021), and sense of institutional belonging. A supportive institutional environment not only helps in the reduction of dropout rates but also positively influences academic success and student well-being. These points highlight the significance of studying self-efficacy and associated learning processes in their institutional and contextual context, especially during the early years of higher education.

2.2. Academic Self-Efficacy and Its Role in Learning

In Bandura's model, self-efficacy beliefs are not viewed as generalized optimism or global confidence but are more specific to tasks and contexts, involving personal beliefs about one's ability to effectively perform in a given situation (Usher & Pajares, 2008). In an educational setting, this means that students assess their own competence in relation to particular academic tasks, learning situations, or domains, such as learning new subject matter, solving complex problems, or overcoming academic challenges. Bandura has identified four major sources through which self-efficacy beliefs are developed. Mastery experiences, or personal successes, are the most potent sources, where successful task performance enhances self-efficacy, but failure can erode it. Vicarious experiences, based on observing the performance of others, serve as points of comparison that can strengthen or weaken efficacy beliefs. Social persuasion,

through encouragement or feedback from teachers and peers, can provide temporary boosts to learners' confidence in their abilities. Lastly, the interpretation of experiences related to emotional and physiological states, such as anxiety, stress, fatigue, or activation, can affect how individuals judge their ability to perform (Bandura, 1997). These sources combine to form a cognitive framework of appraisal that determines whether students view academic tasks as challenges to be accomplished or threats to be avoided.

In the context of educational institutions, self-efficacy has been viewed as an important motivational concept, as it has a direct influence on learning motivation, effort expenditure, and goal-setting behavior. Students with high academic self-efficacy are more likely to have high aspirations for learning, display high intrinsic motivation, engage in difficult tasks, and view obstacles as opportunities for growth (Artino, 2006). Conversely, low self-efficacy is often linked to the erosion of motivation, task engagement, and avoidance behavior. When students view academic demands as surpassing their perceived capabilities, learning involvement, persistence, and achievement are likely to suffer. Academic self-efficacy is also intricately linked to the use of self-regulated learning strategies by students. Students with high self-efficacy are more likely to engage in deep learning strategies like elaboration and searching for conceptual relationships, as well as metacognitive strategies like planning, monitoring, and self-evaluation. Time and task management skills are also more likely to be demonstrated by students with high self-efficacy. Crucially, this is a two-way relationship, as the effective use of systematic and conscious learning strategies also serves to reinforce self-efficacy beliefs by enhancing the probability of successful learning outcomes (Schunk & Pajares, 2002).

Another essential role of self-efficacy is in the maintenance of persistence and resilience in the face of failure. According to Bandura, students with high self-efficacy are more likely to persevere longer when faced with difficulties, defer task abandonment, and consider alternative approaches to problem-solving. They are also more likely to view failure as a source of informative feedback, rather than as a sign of lacking ability. On the other hand, low self-efficacy is related to rapid task disengagement, avoidance of challenging tasks, and a tendency to view failure as a threatening event. In the classroom, these processes have important implications for academic progress, especially in situations involving prolonged effort and complex problem-solving (Phan & Ngu, 2016).

These results highlight the importance of understanding that academic success is not solely dependent on intelligence, but is instead significantly influenced by motivational, emotional, and behavioral processes associated with self-efficacy beliefs.

Foreign language higher education programs come with their own set of academic challenges, as students are required to cope with subject matter simultaneously in a foreign language. This can have implications for information processing, term mastery, and academic communication, and cultural differences and varying educational norms add to the challenges. Foreign language programs thus provide opportunities for international academic socialization but can also pose challenges to the development and consolidation of learning-related self-efficacy beliefs. Learning challenges are also influenced by the context of the institution. In the Hungarian higher education system, institutions vary in terms of teaching traditions, organizational frameworks, and academic requirements. International programs may operate in diverse intercultural learning settings, and international students may face unfamiliar administrative, educational, and social adjustment demands (Andrade, 2006; Zhou & Zhang, 2014).

Academic self-efficacy should therefore be understood as a context-dependent and dynamic construct shaped by situational demands, prior experiences, and perceived support. These considerations underline the importance of examining entry-phase self-efficacy across different linguistic and institutional settings, forming the empirical basis of the present study.

The following section therefore outlines the methodological design of the study, including the participants, data collection procedures, and analytical strategies employed to examine these relationships.

3. Materials and methods

Academic self-efficacy beliefs were measured by means of the SESW questionnaire (Skala zur Erfassung der Studieneinstiegsselbstwirksamkeit), which was developed by Petri (2020). The SESW is a theoretically well-founded and empirically validated instrument that is specifically designed to measure entry-related self-efficacy beliefs. The SESW questionnaire is designed to measure context-specific challenges that are typical of the transition to higher education and has been proven to be an early indicator of academic achievement and dropout. The SESW questionnaire consists of 13 closed-ended items, of which 12 are Likert-scale items, and is divided into three empirically validated dimensions: Learning Organization (FuS), which refers to time management and organization; Motivation and Cognitive Confidence (MuK), which refers to motivational regulation and activation of prior knowledge; and Cognitive Challenges (kH), which refers to self-efficacy beliefs regarding higher-order academic tasks and discipline-specific learning. Although the SESW includes all three dimensions, the present study's hypotheses and group comparisons concern only kH and MuK; FuS was outside the scope of the present analyses. Because of its research and diagnostic value, the SESW is particularly

useful for studying entry-phase-related challenges, tracking the development of self-efficacy beliefs, and investigating the role of self-efficacy beliefs in early academic achievement and persistence.

Data were collected using an online, self-administered survey implemented on a GDPR-compliant online platform. The study was limited to voluntary participation among students with active enrollment status during the data collection period. The final analytic sample comprised 123 first-year students: 35 enrolled in Hungarian-language programs at a regional Hungarian foundation-maintained university and 88 enrolled in English-language programs in Hungary. Data were collected during the autumn semester of the academic year 2024/25, at the beginning of university studies. The survey was distributed electronically through institutional online communication channels using a non-probability, voluntary response sampling method. No further inclusion or exclusion criteria were considered. Although this sampling strategy enabled rapid and cost-effective data collection in the target population, it is associated with potential sampling bias concerning students' motivation and availability. The study fully adhered to the ethical standards of research. Participants were provided with comprehensive information about the nature of the research, data processing, and terms of participation before answering the questionnaire. Informed consent was obtained electronically. The study did not collect any data that could lead to the identification of participants, and all the analyses were done on aggregated data stored on password-protected systems. Data processing entailed the removal of any data that was incomplete. The quantitative analysis was conducted using common spreadsheet software. Descriptive statistics were calculated for each group, and group differences in kH and MuK factor scores were tested using Mann–Whitney U tests, with statistical significance evaluated at $p < .05$. Because the research was exploratory and the sample was small, the analysis tended to focus on the identification of patterns rather than causation.

4. Results

The Cognitive Challenges (kH) factor captures the issue of academic self-efficacy with regard to students' belief in their ability to learn discipline-specific approaches and understand complex professional relationships. The two items in this block together measure confidence in dealing with higher-order cognitive tasks typical of the early phase of university education. The findings show that, in both the Hungarian-language and English-language study programs, the level of self-efficacy related to cognitive challenges is moderately high. The mean response patterns indicate that students in both groups tend to believe they will be able to deal with the methodological demands of their discipline and understand more complex academic issues

during the semester. Comparison of the two study groups did not reveal a statistically significant difference in the average level of cognitive self-efficacy. In the present sample, no statistically significant group difference was observed for cognitive self-efficacy. On the other hand, the data from students in English-language programs showed more variability in their responses, which suggests a more varied perception of cognitive self-efficacy among these students. This was especially evident in the item about understanding complex professional relationships, which may be due to differences in their educational backgrounds and the processing of cognitive demands in academic learning. In general, the results for the cognitive challenges dimension show that students enter higher education with a positive self-perception of cognitively demanding academic tasks, but individual differences in the integration of complex disciplinary knowledge can already be detected at the beginning of the semester.

Analysis of the combined kH index revealed no statistically significant difference between the two groups of students. A Mann–Whitney U test was conducted to compare the factor scores obtained from the kH items ($U = 1551.0$, exact $p = 0.871$). The analysis did not provide evidence of a group difference in the present sample. Accordingly, H1 was not supported.

The second hypothesis tested whether there was a difference between students enrolled in English-language programs in Hungary and students in Hungarian-language programs at a regional Hungarian foundation-maintained university regarding their academic self-efficacy concerning motivation and activation of prior knowledge (MuK). The composite scores of MuK, calculated from the relevant items, were used to measure this variable. The results of the descriptive statistics indicated that, although both groups had moderately high levels of self-efficacy concerning MuK, students in English-language programs had higher scores than those in Hungarian-language programs. To identify the differences between the two groups, the Mann–Whitney U test was employed. The results indicated a statistically significant difference between the two groups, with higher MuK self-efficacy among students in English-language programs. Full descriptive and inferential statistics are summarized in Table 1.

These findings indicate a statistically significant difference between the two student groups with regard to academic self-efficacy in relation to motivation and prior knowledge. Accordingly, H2 was supported in the present sample. The descriptive and inferential statistics are summarized in Table 1, and the comparison of the two SESW dimensions across the study groups is summarized in Fig. 1.

Table 1. Descriptive and Mann–Whitney U statistics for the two focal SESW dimensions by study group.

Dimension	HU descriptive statistics Mean/SD/Median	EN descriptive statistics Mean/SD/Median	Mann–Whitney U	Exact p	Effect size
kH	7.657 / 1.474 / 8.0	7.563 / 1.530 / 8.0	1551.0	0.8705	-0.0187
MuK	3.471 / 0.939 / 3.5	3.839 / 0.963 / 4.0	1178.5	0.0489	0.226

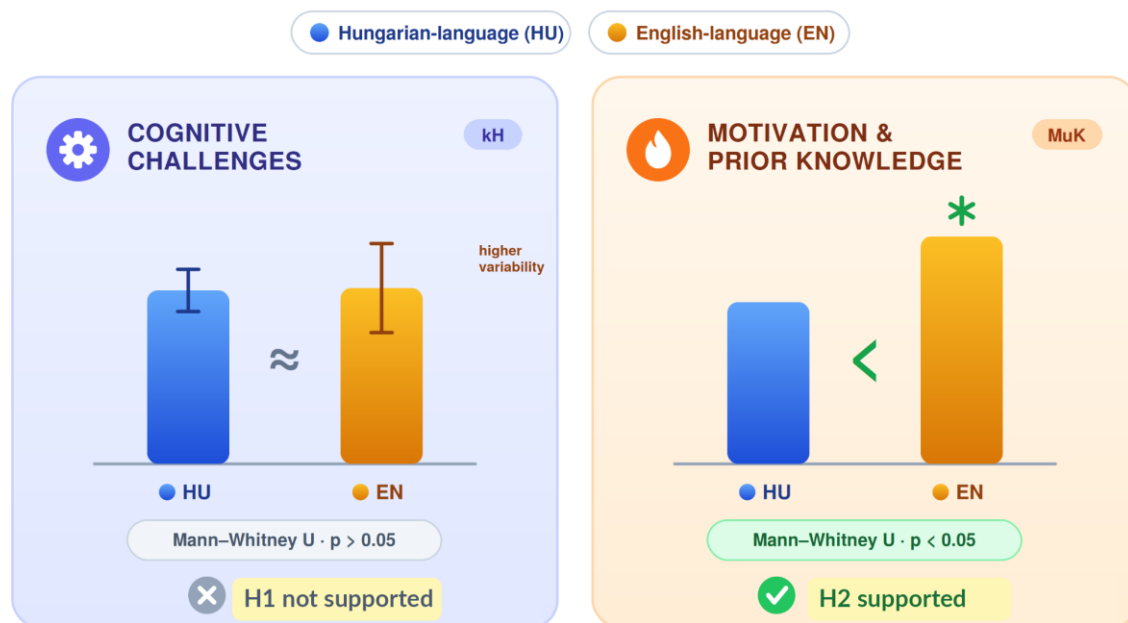


Fig. 1. Schematic comparison of the reported academic self-efficacy patterns in Cognitive Challenges (kH) and Motivation and Prior Knowledge (MuK) for Hungarian-language (HU) and English-language (EN) programs.

5. Discussion

The current study investigated the differences in academic self-efficacy at the onset of higher education between students enrolled in English-medium programs in Hungary and those in Hungarian-language programs in a regional Hungarian foundation-maintained university. The findings show a differentiated pattern concerning self-efficacy beliefs, underlining the context-dependent nature of academic self-efficacy at the transition to higher education. In regard to self-efficacy beliefs concerning cognitive demands, no statistically significant difference was found between the two groups. This result is consistent with research showing that academic self-efficacy at university entry is closely associated with previous academic experiences and adjustment (Chemers et al., 2001). Prior educational experiences and feelings of general academic competence may therefore help explain the similarity between the groups (Timmis et al., 2024).

On the other hand, the higher variance found among students in English-taught programs indicates a more diverse cognitive self-efficacy profile in this group. This corresponds with international student research, which has found that groups of students in foreign-language or international programs tend to consist of individuals with very diverse educational backgrounds and levels of familiarity with academic learning environments (Andrade, 2006; Zhou & Zhang, 2014). This diversity can lead to inconsistent levels of perceived cognitive preparedness, especially when students are asked to combine complex subject matter knowledge in a foreign language.

By contrast, a statistically significant difference was observed in the dimension concerning motivation and activation of prior knowledge. Students in English-taught programs showed higher levels of self-efficacy in this area. This finding is consistent with research underlining that students in foreign-language or international programs often show higher levels of intrinsic motivation, academic goals, and perceived academic agency (Dearden, 2014; Niehaus & Williams, 2016). The choice to attend an English-taught program could be a form of academic self-selection, in which students with more developed motivational resources and confidence in their learning strategies are more likely to opt for English-taught programs. Previous research has also demonstrated that motivated learners show higher levels of self-efficacy in tasks concerning the activation and transfer of prior knowledge, especially in challenging or novel learning contexts (Zimmerman, 2000). From this point of view, the higher MuK self-efficacy observed among English-program students could represent a compensatory factor that may mitigate the increased cognitive and linguistic load of studying in a foreign language. However, because the comparison groups also differed in institutional context, the observed MuK difference cannot be attributed specifically to language of instruction.

Taken together, the results are consistent with the view that academic self-efficacy is domain-specific and context-dependent. For cognitive challenges, no statistically significant group difference was observed in the present sample, whereas MuK scores differed between the groups. These patterns should be interpreted as associations with the combined linguistic and institutional contexts rather than as effects of language of instruction alone.

These findings underscore the importance of early diagnostic assessment of self-efficacy profiles in the higher education context, and particularly in linguistically and institutionally diverse settings. Students who enter university with lower levels of motivational or cognitive self-efficacy beliefs can potentially be identified as targets for support interventions by institutions, thus facilitating academic persistence and easier transition during the critical early

phase of university involvement. The differentiated interpretation of these domain-specific patterns and their practical implications is summarized in Fig. 2.

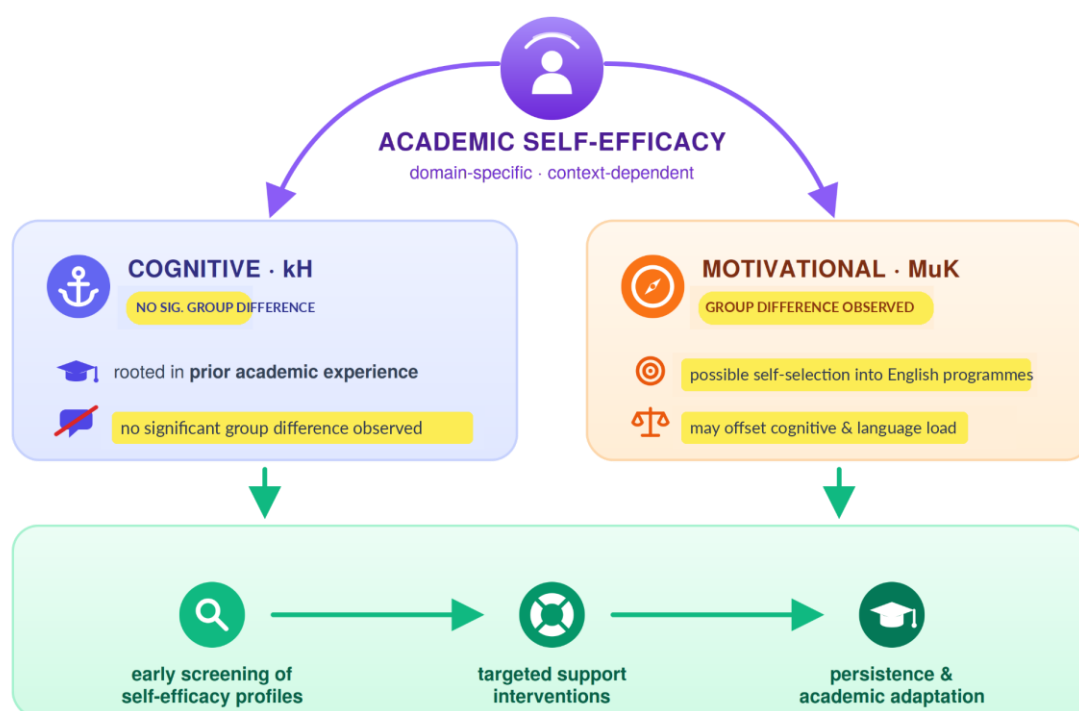


Fig. 2. Conceptual interpretation model of domain-specific academic self-efficacy and the practical pathway from early screening to targeted support, persistence, and academic adaptation.

6. Conclusion

This research investigated academic self-efficacy beliefs at the onset of higher education, with a special emphasis on cognitive demands and motivational-cognitive beliefs in different linguistic and institutional settings. In the present sample, no statistically significant group difference was observed in self-efficacy concerning cognitive demands. Nevertheless, a statistically significant difference was found in the motivation and activation of prior knowledge dimension, where students in English-language programs reported higher self-efficacy beliefs. These patterns should not be interpreted as causal effects of language of instruction because the comparison groups also differed in institutional context. In general, the results are consistent with the assumption that academic self-efficacy is a context-dependent and multi-dimensional construct that is of crucial importance during the early phase of university education. The SESW questionnaire was shown to be a useful tool for determining the initial self-efficacy patterns and may be considered a valuable instrument for early diagnostics and targeted interventions of the institution.

The results are limited by the use of a non-random, self-selected sample and self-report measures, which may be prone to response and sampling biases. Furthermore, the cross-sectional design of the study does not allow causal interpretations or conclusions on the stability and developmental changes of academic self-efficacy. In addition, the comparison groups differed not only in language of instruction but also in institutional context, which prevents attribution of observed group differences to language alone.

Ethics statement

Participation was voluntary. Participants received information about the research, data processing, and terms of participation before completing the survey, and informed consent was obtained electronically. No identifying data were collected, and analyses were conducted on aggregated data stored on password-protected systems.

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