

Educational competencies as predictors of academic self-concept among secondary physical education teachers

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ABSTRACT

This study examines educational competencies as a predictor of academic self-concept among physical and sports education teachers. We employed a correlational descriptive approach on a sample of 70 secondary school physical education teachers selected from a population of 357. The study utilized the Educational Competencies Scale and the Academic Self-Concept Scale. The findings revealed a statistically and practically significant correlational and predictive relationship between educational competencies and academic self-concept. Educational competencies accounted for approximately 15% of the variance in academic self-concept. The study concluded that academic self-concept could predict educational competencies among physical and sports education teachers. Specifically, an improvement of one unit in educational competencies was associated with an increase of 0.628 units in academic self-concept, according to the derived prediction equation.

Keywords: Physical activity, Teaching competencies, Academic self-concept, Physical education, Sports education teachers.

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INTRODUCTION

In recent years, the educational landscape has undergone rapid and fundamental transformations, particularly in redefining teacher quality and indicators of effectiveness. Within this context, teaching competencies—including pedagogical knowledge, content mastery, instructional skills, and effective classroom management—are key determinants of teacher effectiveness (Khamkaew et al., 2024).

In physical and sports education, these competencies take on a unique and complex character due to the dual nature of the discipline, which integrates both physical and academic cognitive dimensions (Coppola et al., 2024). Despite the significance of this subject in shaping learners' personalities and enhancing their physical and psychological well-being, a growing concern arises regarding a noticeable gap between the teaching competencies that physical and sports education teachers are expected to possess and their self-perceived academic effectiveness. This discrepancy may negatively impact the quality of their professional performance and their educational identity (Keath et al., 2023).

Misunderstandings about physical and sports education can lead to negative views, pushing these subjects to the sidelines. These misconceptions can seriously harm teachers' professional identity and confidence in this field and lower its importance compared to other academic subjects (Souleymane Diallo, 2021). Such bias can create a situation where physical and sports education teachers find it difficult to see their academic worth, hurting their self-esteem, professional reputation, and ability to make a difference in education. Such prejudice often reinforces an environment in which physical and sports education teachers may struggle with their perceived academic value, negatively impacting their academic self-concept—their perceptions of self-efficacy, professional status, and ability to influence the educational process (Folabit & Jita, 2024).

In this context, the concept of academic self-concept becomes evident, as it refers to teachers' perceptions of their competence, status, and effectiveness within the educational environment. The literature shows that academic self-concept is closely linked to teaching quality, innovation, and psychological resilience in the face of professional challenges (Keath et al., 2023).

Various studies have pointed to a gap between teachers' instructional competencies and their perceptions of academic self-concept, which reflects shortcomings in professional training and institutional support. This was confirmed by Arineitwe et al., (2024), who found that professional preparation, continuous development, and incentive structures positively influence teachers' competencies and, consequently, their academic self-concept.

Similarly, Arif Subekti et al., (2024) emphasized that structured training programs tailored to the specific needs of teachers are essential for enhancing their competencies. Such programs enable teachers to respond effectively to contemporary educational challenges, including technological integration and the development of intercultural skills.

Building on the foregoing, this study investigates the relationship between pedagogical competencies and academic self-concept among secondary school physical and sports education teachers. The study is grounded in Shulman's (1986, 1987) model for analysing the dimensions of teaching competence and Marsh's (1990) theory of academic self-concept to explain variations in teachers' perceptions of their self-efficacy. From this perspective, it is assumed that a teacher with advanced pedagogical competencies is more likely to exhibit a positive academic self-concept, and vice versa.

Accordingly, the primary objective of this study is to analyse the predictive relationship between pedagogical competencies and academic self-concept among physical and sports education teachers. Specifically, the study seeks to determine how various components of pedagogical competence contribute to explaining differences in teachers' perceptions of their academic self-concept. The central research question guiding this inquiry is, to what extent do pedagogical competencies predict the academic self-concept of secondary school physical and sports education teachers?

MATERIALS AND METHODS

Participants

The study sample comprised 70 physical and sports education teachers during the 2024–2025 academic year. Participants were randomly selected from the teacher population. This sample represents a group of instructors teaching physical and sports education at the secondary level, offering helpful information regarding teaching competencies and academic self-concept among educators.

Instruments

This study utilized the Teaching Competencies Scale and the Academic Self-Concept Scale. The Teaching Competencies Scale consists of 56 items distributed across five dimensions. Responses are recorded using a five-point Likert scale (Always, Often, Sometimes, Rarely, Never), corresponding to scores of 5, 4, 3, 2, and 1 for positively worded items. We reverse the scoring for negatively worded items (5, 4, 3, 2, 1).

The Academic Self-Concept Scale consists of 36 items distributed across four dimensions. Responses are provided using a five-point Likert scale (Always, Often, Sometimes, Rarely, Never), with scores of 5, 4, 3, 2, and 1 for positively worded items. For negatively worded items, reverse scoring is applied (1, 2, 3, 4, 5).

Psychometric properties

Validity

To assess the instrument's validity, Pearson correlation coefficients were calculated between the score of each dimension and the total score of the Teaching Competencies Scale, as presented in Table 1.

Table 1. Pearson correlation coefficients between each dimension score and the total score of the academic self-concept scale.

Dimension	Item Numbers	R relation coefficient
Planning	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	.541*
Lesson implementation	11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	.865**
Assessment	47, 48, 49, 50, 51, 52, 53, 54, 55, 56	.589**

Note. * $p < .01$ (two-tailed). ** Correlation statistically significant at the .01 level.

The analysis of the educational competencies scale demonstrates acceptable construct validity across the three assessed dimensions: planning, lesson implementation, and assessment. As shown in Table 1, the Pearson correlation coefficients between each dimension and the scale's total score are all statistically significant, indicating that each subscale contributes meaningfully to the overall construct. Specifically, the Lesson Implementation dimension strongly correlates with the total score ($r = 0.865$, $p < .01$), suggesting a high alignment between this dimension and the general educational competency construct. The assessment dimension also shows a moderately strong correlation ($r = 0.589$, $p < .01$), while the planning dimension presents a moderate but significant correlation ($r = 0.541$, $p < .05$). These findings back up how the tool is

set up and show that the items in each area accurately reflect their specific concepts, strengthening the scale's trustworthiness and accuracy for measuring teachers' educational skills.

Table 2. Pearson correlation coefficients between each dimension score and the total score of the academic self-concept scale.

Dimension	Item Numbers	R relation coefficient
Goal setting and self-discovery	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	.883**
Academic task management ability	12, 13, 14, 15, 16, 17, 18, 19, 20, 21	.902**
Coping with academic stress	22, 23, 24, 25, 26, 27, 28	.870**
Success expectancy	29, 30, 32, 33, 34, 35, 36	.857**

Note. * $p < .01$ (two-tailed). ** Correlation statistically significant at the .01 level.

The study of the academic self-regulation scale shows that it is reliable and accurately measures what it is supposed to across four areas: setting goals and understanding oneself, managing academic tasks, handling academic stress, and expecting success. Table 2 shows that item-to-dimension correlation coefficients are above .85, with particularly high correlations for Academic Task Management Ability ($r = 0.902$) and Goal Setting and Self-Discovery ($r = 0.883$). These results suggest that the scale items strongly represent their underlying constructs and contribute meaningfully to the overall factor structure. The strong correlation coefficients ($r > 0.85$) across dimensions indicate that the scale is reliable and valid for measuring academic self-regulation among university students.

Statistical analysis

We analysed the data using the simple linear regression model.

RESULTS

Table 3. Results indicating the relationship between teaching competencies and academic self-concept among physical and sports education teachers.

Variable	Educational competencies	Academic self
Educational competencies	1	0.39**
Academic self		1
Significance		.000

Note. ** Correlation statistically significant at the .01 level.

Table 3 presents the Pearson correlation coefficient between teaching competencies and academic self-concept among physical and sports education teachers. The analysis revealed a statistically significant positive correlation between the two variables ($r = 0.39$, $p < .001$) at a significance level .000. Although the correlation is of moderate strength, this result holds meaningful, practical significance in educational research. It suggests that teachers with higher teaching competencies tend to have a stronger academic self-concept.

These findings align with the study by Kumar & Sharma, (2024), which indicated that higher pedagogical competencies are positively associated with teachers' academic self-efficacy. This is further supported by the findings of Eka Mayasari & Syarif, (2024), who emphasized that the effectiveness and quality of teaching largely depend on the teacher's ability to develop their competencies, enhancing their confidence in their academic and professional capabilities.

Table 4. Results of the simple linear regression model between teaching competencies and academic self-concept among teachers.

Educational competencies	Academic self	R	R ²	F	Sig. F	β	T	Sig. T
		0.39	.15	12.58	.001	0.628	2.21	.001

A simple linear regression model was employed to verify the predictive capacity of teaching competencies for academic self-concept, as shown in Table 5. The model demonstrated statistical significance ($F = 12.58$, $p = .001$), indicating that teaching competencies account for approximately 15% of the variance in academic self-concept ($R^2 = .15$). Moreover, the standardized regression coefficient ($\beta = 0.628$, $T = 2.21$, $p = .001$) reflects a statistically significant positive relationship. It implies that every unit increase in teaching competencies leads to a corresponding rise of 0.628 units in academic self-concept.

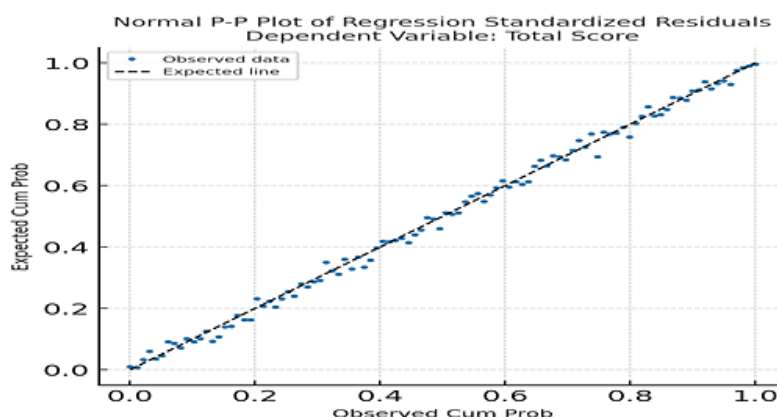


Figure 1. Scatter plot of teaching competencies and academic self-concept.

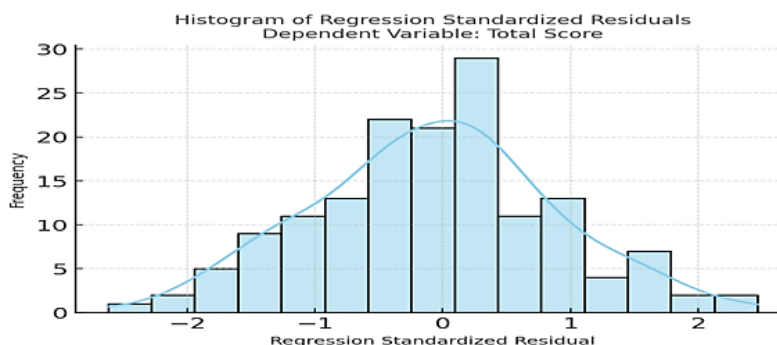


Figure 2. Regression line illustrating the predictive relationship.

Accordingly, the regression equation can be expressed as follows:

$$Y = 59.72 + 0.62X$$

That is:

$$\text{Academic Self-Concept} = 59.72 + 0.62 (\text{Teaching Competencies})$$

This result implies that it is possible to predict academic self-concept among physical and sports education teachers based on their teaching competencies using the above equation.

DISCUSSION

Based on the aforementioned findings, it becomes evident that teaching competencies can predict academic self-concept among physical and sports education instructors. This finding is attributed to the fact that possessing high-level teaching competencies directly enhances the instructor's sense of efficacy and confidence in their academic performance, which in turn reflects positively on their self-esteem within the professional context.

Teachers with cognitive, methodological, communicative, and evaluative competencies are better equipped to plan lessons effectively, manage classrooms efficiently, and achieve educational objectives (Misra, 2021). These competencies contribute to a stronger sense of professional success and academic excellence. A study by Hermoso & Brobo, (2023) showed that competencies—such as cognitive, motivational, communication skills, and teaching ability—are significantly related to teaching performance. The more proficient teachers are in instructional skills (cognitive, methodological, evaluative, and communicative), the more capable they are of handling diverse classroom situations.

Moreover, teachers with multicultural competencies tend to teach and influence students from diverse backgrounds more effectively. Nasution & Abdillah, (2024) highlighted this, noting that teachers with multicultural competencies demonstrate high effectiveness in teaching and classroom management, which in turn boosts their self-confidence and appreciation of their professional skills. This perspective is further supported by Schunk & DiBenedetto, (2021), who emphasized that self-efficacy is a decisive motivational factor that directly impacts behavior, learning, and academic achievement.

From another perspective, teachers who receive support within the educational environment experience an enhanced sense of self-worth. Whether direct or indirect, such support fosters pre-service teachers' feelings of self-efficacy and encourages their persistence in practice (Liu et al., 2025). Strengthening perceptions of various teaching competencies is closely linked to fulfilling basic psychological needs, crucial in reinforcing self-esteem (Camacho Carranza & Almagro, 2024). Similarly, Jurs et al., (2022) indicated that enhancing teachers' motivation to teach requires a supportive learning environment that meets their psychological needs and values their professional contributions. Teachers who feel competent and autonomous tend to be more committed and organized, positively affecting their academic self-concept. Achieving high levels of self-competence among teachers thus requires combining multiple factors, including intrinsic motivation, professional expertise, and a supportive organizational culture (Putri & Yuliana, 2024).

Teaching competencies are not acquired randomly or suddenly; they are the inevitable result of a cumulative process involving academic training, teaching experience, and continuous engagement with diverse educational environments (Dhungana, 2024; Toshtemirovich, 2023). The more proficient a teacher becomes in various instructional competencies, the more significantly this contributes to their self-esteem, making teaching competencies a central and foundational element of their professional identity.

Moreover, teachers with high teaching competencies tend to be more able to manage and control the classroom efficiently. Granada & Oco, (2024) highlighted that teaching competencies directly and significantly impact a teacher's classroom management skills.

In addition, teaching experience plays a substantial role in shaping academic self-concept. A study by Aouani & Amara, (2024) found that professional experience is a decisive factor in developing self-esteem among

physical education teachers, as it helps reinforce their positive self-perception through their ability to navigate professional and psychological challenges.

The findings of this study are consistent with those of Khaki Najafabadi et al., (2021), who found that improvements in professional competencies lead to higher levels of academic self-concept. The greater the pre-service teacher's commitment to these elements, the higher their self-confidence and instructional competence. These results also agree with those of Schneider et al., (2022), indicating that self-concept and teaching competencies are strong predictors of future educational outcomes. This finding underscores the vital role of professional educational development in fostering a sense of competence and success within the educational context.

Recent studies have shown that several other factors, including teachers' personality traits, influence academic self-concept. Personality characteristics have been found to predict academic self-concept and self-efficacy (Ahmed Khan et al., 2024). This finding is supported by Aydin, (2024), who emphasized that self-efficacy in effective communication serves as a key driver linking positive personality traits to the development of academic self-efficacy. Moreover, educational institutions influence self-concept through various dimensions, such as the physical and social environment, teaching methods, and the quality of interpersonal relationships (Lee et al., 2024).

Even though the findings are important, the amount of explained variance ($R^2 = .15$) is only moderate, which leads to questions about whether teaching skills alone are enough to explain academic self-concept. This conclusion shows that we need to improve the theoretical model by adding other factors, like personality traits, work environment, intrinsic motivation, external incentives, and professional experience, that could make the model more accurate.

CONCLUSIONS

Teaching competencies represent a fundamental pillar in shaping teachers' academic self-concept, as they directly influence self-confidence, instructional effectiveness, and professional identity development. This study's findings revealed a positive relationship between teaching competencies and academic self-concept, indicating that enhancing teaching competencies improves instructional quality and positively shapes how teachers perceive themselves academically. In this context, there is a growing need to adopt modern approaches to developing various professional competencies that integrate academic training with psychological support and enhance social and communicative skills. The study recommends that future research incorporate additional psychological and contextual factors, such as emotional intelligence, institutional support, personal resilience, and specific personality traits, to construct a more comprehensive and in-depth model. Furthermore, the results highlight the importance of designing professional development programs to refine teachers' instructional competencies, which may positively influence their performance and academic self-concept. The findings suggest that future research should use a more detailed approach, like structural equation modeling (SEM), to examine both direct and indirect effects and recognize how teaching skills relate to academic self-concept.

AUTHOR CONTRIBUTIONS

Kamel Berroudj: conception and design of the study, data collection, and drafting of the initial manuscript. Amina Chafaa: data analysis, interpretation of results, and critical revision of the manuscript. Abdelmounaim Mefti: methodology development, literature review, preparation of tables/figures, overall supervision, and final

approval of the version to be published. All authors have read and approved the final manuscript and agree to be fully accountable for all aspects of the work.

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No potential conflict of interest was reported by the authors.

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