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The Impact of Self-Efficacy Training on Goal Setting and Academic Persistence

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A B S T R A C T

Objective: The objective of this study was to evaluate the effectiveness of self-efficacy training on enhancing goal setting and academic persistence among high school students.

Methods and Materials: This research employed a randomized controlled trial design with two groups: an experimental group receiving self-efficacy training and a control group with no intervention. Thirty students from Bulgaria were randomly assigned to each group (n = 15). The intervention consisted of twelve structured sessions (45–60 minutes each), designed based on Bandura's self-efficacy theory and focused on goal setting, self-belief, emotional regulation, and academic strategies. Participants completed validated scales measuring goal setting and academic persistence at pre-test, post-test, and five-month follow-up stages. Data were analyzed using repeated measures ANOVA and Bonferroni post-hoc tests with SPSS-27.

Findings: The results indicated significant improvements in both goal setting and academic persistence in the experimental group over time compared to the control group. Descriptive statistics revealed that the experimental group's mean score for goal setting increased from 45.73 (SD = 5.19) at pre-test to 58.60 (SD = 4.77) at post-test and remained high at follow-up (M = 57.80, SD = 5.12). Academic persistence scores followed a similar pattern, increasing from 34.87 (SD = 4.11) to 42.27 (SD = 3.65) and slightly decreasing to 41.40 (SD = 3.84). Repeated measures ANOVA showed significant main effects for time and group, and a significant interaction effect ($p < .001$). Bonferroni tests confirmed significant improvements from pre-test to post-test and follow-up ($p < .001$), with no significant decline between post-test and follow-up.

Conclusion: The self-efficacy training program effectively enhanced students' goal-setting abilities and academic persistence, with lasting effects observed after five months. These results support the integration of psychological skills training into school curricula to promote student motivation and resilience.

Keywords: *Self-efficacy training; goal setting; academic persistence; high school students; randomized controlled trial; psychological intervention.*

1. Introduction

Academic success is not solely the result of intellectual capability; rather, it stems from a combination of cognitive, motivational, and behavioral factors that influence students' approach to learning. Among these, self-efficacy has emerged as a central psychological construct affecting a range of educational outcomes, including motivation, academic engagement, persistence, and goal attainment. Self-efficacy, originally conceptualized by Bandura, refers to an individual's belief in their ability to perform tasks and achieve desired outcomes in specific contexts. Within the domain of education, students with higher academic self-efficacy are more likely to engage in effective learning strategies, set challenging goals, persist in the face of difficulties, and ultimately perform better academically. This concept has been widely explored across various educational systems and cultural contexts, reinforcing its critical role in academic development and personal growth (Zam et al., 2024).

In recent years, self-efficacy has gained renewed attention as educators and psychologists seek to understand how it can be deliberately enhanced to support academic performance. Evidence suggests that students with higher self-efficacy are more resilient when facing setbacks and are more likely to adopt mastery-oriented strategies rather than avoiding tasks (Basith et al., 2020). Interventions designed to strengthen students' self-efficacy can therefore serve as a preventive and empowering strategy to address academic underachievement and disengagement. Such interventions often incorporate techniques like goal setting, self-reflection, and modeling—each of which plays a distinct role in reinforcing self-belief (Dattathreya, 2022). The application of self-efficacy principles in both structured coaching programs and informal classroom practices has yielded promising results, particularly when aligned with students' personal and academic goals (Du et al., 2024).

One of the most effective mechanisms for increasing self-efficacy is goal setting. Goal setting not only provides a clear direction for learning but also serves as a framework for evaluating progress and adjusting strategies. The process of setting and striving toward academic goals cultivates a sense of control and intentionality, which in turn reinforces students' beliefs in their abilities (Al-Bataineh et al., 2019). Research consistently shows that when students set specific, attainable goals, they exhibit greater motivation and persistence, especially in challenging academic environments (Oldham, 2018). The integration of goal setting into educational interventions has been shown to significantly enhance outcomes such as performance, engagement, and self-regulation (Chung et al., 2021).

The reciprocal relationship between self-efficacy and goal setting is particularly evident among adolescents, a developmental stage characterized by identity exploration, social comparison, and heightened sensitivity to success and failure. Adolescents with strong self-efficacy beliefs are more likely to set ambitious goals and take deliberate action toward achieving them, while successful goal attainment further enhances their confidence and motivation (Ye, 2021). Studies conducted among high school and college students confirm that goal setting and self-efficacy interact in complex ways to influence persistence, especially when students face obstacles such as academic pressure or uncertainty about their future (Heikkinen et al., 2024).

Academic persistence, defined as the ability to maintain engagement and effort toward academic tasks despite difficulties, is a critical outcome that bridges the gap between intention and achievement. Students who persist are more likely to complete assignments, seek help when needed, and maintain long-term academic plans. Persistence is closely tied to both goal setting and self-efficacy, as it is often self-belief that determines whether a student continues to strive or withdraws when challenged (Dong et al., 2020). Research has demonstrated that interventions focusing on self-regulation and motivational training significantly improve academic persistence by equipping students with cognitive and emotional strategies to cope with failure and sustain effort (Macklem, 2020).

Several studies have examined how self-efficacy interventions influence not only immediate outcomes but also long-term academic behavior. Longitudinal research indicates that improvements in self-efficacy can have enduring effects on students' academic attitudes and achievement trajectories (Rożnowski & Kot, 2020). Moreover, the role of contextual factors such as school environment, teacher support, and cultural norms has been acknowledged as influential in shaping self-efficacy beliefs, suggesting the importance of culturally sensitive program design (Li, 2024). For instance, the educational context in Eastern Europe, including Bulgaria, presents unique challenges related to academic motivation and engagement, thereby offering a valuable setting for testing the effectiveness of self-efficacy-based interventions.

The development of structured programs aimed at boosting self-efficacy has also benefited from insights gained through technology-enhanced learning and virtual

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coaching. Digital interventions that support self-monitoring, feedback, and personalized goal setting have been shown to improve students' motivation and adherence to academic routines (Dierikx et al., 2024). These innovations complement traditional face-to-face methods and highlight the versatility of self-efficacy theory in diverse delivery formats. Meanwhile, applications in workplace and professional development contexts further demonstrate the cross-domain utility of self-efficacy training, suggesting potential benefits for lifelong learning (Hoffmann, 2023).

Despite the growing body of research supporting the relationship between self-efficacy and academic outcomes, there remains a need for more rigorous experimental studies—particularly randomized controlled trials—that assess the causal impact of self-efficacy training on key academic variables such as goal setting and persistence. Such trials are crucial for identifying the specific mechanisms through which psychological interventions affect academic behavior and for ensuring the generalizability of findings across diverse populations (Saks, 2024). Furthermore, understanding how these mechanisms function across different cultural and educational contexts can help refine intervention strategies and tailor them to the needs of specific student groups (Taylor et al., 2024).

In addition, research suggests that the integration of self-efficacy and goal setting within a single intervention protocol may yield synergistic effects. When students learn how to set achievable goals and are simultaneously taught to believe in their ability to reach them, they develop stronger academic identities and are more likely to demonstrate resilience and consistency in their efforts (Gobbi, 2022). Such integration also promotes metacognitive awareness, enabling students to reflect on their learning strategies and adjust them proactively (Mihalca et al., 2024). As academic environments continue to demand greater independence and self-direction from students, particularly in the post-pandemic era, equipping them with psychological tools like self-efficacy becomes increasingly essential (Brinkman et al., 2020).

In vocational and applied education contexts, the impact of goal setting and self-efficacy is equally pronounced. Students in these settings often face additional challenges such as performance anxiety and limited support systems. Studies conducted in vocational high schools have shown that self-efficacy-based interventions can significantly improve students' confidence, goal clarity, and practical engagement (Lokahitta & Affandi, 2023). This finding supports the idea that self-efficacy is not confined to academic subjects alone but is a broad construct that influences various forms of learning and performance (Sutrisno & Arsanti, 2023). Moreover, when combined with consistent mentoring and feedback, self-efficacy training can empower students to overcome socioeconomic and psychological barriers to academic and career success (Du et al., 2024).

Teacher attitudes and self-efficacy also play an indirect but critical role in shaping student outcomes. Teachers with high self-efficacy are more likely to employ innovative teaching strategies, maintain high expectations, and foster supportive classroom environments—all of which contribute to students' academic self-concept and persistence (YentÜR, 2023). Educational systems that prioritize the professional development of teachers alongside student-focused interventions are thus more likely to see sustainable improvements in student engagement and achievement. This highlights the importance of systemic approaches to enhancing self-efficacy at both student and institutional levels.

In conclusion, the interconnection between self-efficacy, goal setting, and academic persistence forms a dynamic framework for understanding and improving student achievement. As educational demands grow and learner diversity increases, targeted interventions that cultivate psychological strengths like self-efficacy are vital. The present study addresses this need by implementing a structured self-efficacy training program and evaluating its impact on goal setting and academic persistence in Bulgarian high school students.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a randomized controlled trial design to examine the effectiveness of self-efficacy training on goal setting and academic persistence among adolescents. The research population consisted of high school students in Bulgaria, and a total of 30 participants were selected using purposive sampling based on inclusion criteria such as willingness to participate, academic difficulties, and absence of severe psychological disorders. Participants were randomly assigned to either the experimental group (n = 15), which received the self-efficacy training intervention, or the control group (n = 15), which did not receive any psychological intervention during the study period. Both groups completed pre-test, post-test, and five-month follow-up assessments using validated measurement tools.

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2.2. Measures

2.2.1. Goal Setting

To measure goal setting, the Goal Orientation Scale developed by Button, Mathieu, and Zajac (1996) was utilized. This standard instrument assesses individuals' tendencies toward goal-setting behavior in academic and task-related contexts. The scale consists of 16 items and includes two subscales: Learning Goal Orientation (8 items) and Performance Goal Orientation (8 items). Respondents rate their agreement with each item on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Higher scores on each subscale indicate a stronger orientation toward that specific goal-setting tendency. The validity and reliability of the Goal Orientation Scale have been confirmed in various educational and psychological studies, demonstrating acceptable internal consistency coefficients for both subscales ($\alpha > 0.80$), and its construct validity has been supported through factor analysis and correlations with related academic behaviors.

2.2.2. Academic Persistence

Academic persistence was measured using the Academic Persistence Scale developed by Shin, Sutherland, Shin, and Conley (2009). This validated instrument is designed to assess students' tendency to remain engaged with academic tasks despite obstacles or difficulty. The scale comprises 10 items and does not include distinct subscales. Responses are recorded on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with higher total scores indicating greater academic persistence. Previous research has confirmed the scale's reliability, with Cronbach's alpha typically exceeding 0.85, and its validity has been supported through correlations with related constructs such as academic motivation, effort regulation, and academic achievement.

2.3. Intervention

2.3.1. Self-Efficacy Training

The intervention in this study was designed based on Bandura's theory of self-efficacy and structured into twelve 45–60 minute sessions. The overall goal was to enhance students' self-belief in their ability to achieve academic goals and persist in the face of challenges. The sessions were conducted weekly in group format, incorporating cognitive-behavioral techniques, experiential activities, guided discussions, and goal-setting exercises. The content was progressive, moving from awareness of self-efficacy beliefs to practical application in academic contexts, with frequent opportunities for reflection, feedback, and peer interaction.

Session 1: Introduction and Orientation

The first session focused on establishing group norms, introducing the purpose and structure of the program, and building rapport among participants. The concept of self-efficacy was briefly introduced, along with its role in academic success. Participants completed a self-assessment of their current academic challenges and self-beliefs. Icebreaker activities and group discussions helped create a supportive environment.

Session 2: Understanding Self-Efficacy

This session explored the theoretical foundations of self-efficacy based on Bandura's model. The four main sources of self-efficacy—mastery experiences, vicarious learning, verbal persuasion, and emotional arousal—were explained with examples. Participants reflected on past academic experiences and began identifying personal patterns in self-belief and performance.

Session 3: Identifying Negative Self-Beliefs

Participants were guided to recognize common cognitive distortions and self-defeating thoughts related to academic tasks. Through cognitive restructuring exercises, they learned how negative thinking undermines self-efficacy and persistence. Group activities involved identifying negative statements and rephrasing them into more constructive alternatives.

Session 4: Setting Meaningful Academic Goals

This session introduced SMART goal setting (Specific, Measurable, Achievable, Relevant, Time-bound). Participants practiced formulating realistic academic goals and discussed the importance of intrinsic motivation and aligning goals with personal values. They developed short- and long-term academic goals for the duration of the program.

Session 5: Enhancing Mastery Experiences

Participants were encouraged to recall previous academic successes and analyze the skills and strategies that led to those outcomes. The session emphasized the power of mastery experiences in building confidence. Activities included personal success mapping and setting small academic challenges to achieve between sessions.

Session 6: Learning Through Observation

This session focused on vicarious learning and modeling. Participants watched brief videos or listened to stories of peers who had overcome academic struggles. Group

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discussions centered on identifying strategies used by role models and relating those experiences to their own challenges.

Session 7: Verbal Encouragement and Self-Talk

Participants explored the role of verbal persuasion and positive self-talk in enhancing self-efficacy. The session included exercises to practice giving and receiving constructive feedback, and developing internal dialogues to maintain motivation. Peer affirmation activities were used to strengthen interpersonal support.

Session 8: Managing Academic Emotions

This session addressed emotional regulation strategies for dealing with anxiety, frustration, and discouragement in academic settings. Techniques such as deep breathing, progressive muscle relaxation, and mindfulness were introduced. Participants practiced using these tools and reflected on emotional triggers that affect their persistence.

Session 9: Overcoming Obstacles and Problem-Solving

Participants learned structured problem-solving steps to approach academic difficulties. They applied these steps to current challenges and brainstormed multiple solutions in small groups. The goal was to promote adaptive coping strategies and reduce avoidance behaviors that hinder persistence.

Session 10: Building Academic Routines and Habits

This session emphasized time management, study skills, and creating effective academic routines. Participants assessed their current habits and identified areas for improvement. Tools such as planners, prioritization matrices, and habit trackers were introduced to promote consistent academic effort.

Session 11: Strengthening Commitment to Goals

Participants revisited their initial goals, reviewed progress, and addressed any barriers encountered. The session focused on maintaining motivation, reinforcing self-efficacy gains, and adjusting goals as necessary. Visualization exercises were used to imagine future academic success and reinforce commitment.

Session 12: Reflection and Program Closure

The final session provided an opportunity to reflect on the learning journey and celebrate achievements. Participants shared insights, offered feedback, and developed personal action plans to sustain self-efficacy and academic persistence beyond the program. Certificates of participation were distributed, and group closure activities were conducted to foster a sense of completion and growth.

2.4. Data Analysis

Data analysis was conducted using SPSS version 27. To evaluate the effectiveness of the intervention over time, repeated measures analysis of variance (ANOVA) was performed to compare changes in goal setting and academic persistence scores across three time points: pre-test, post-test, and follow-up. The interaction effect between group (experimental vs. control) and time was examined to determine whether the intervention produced significant improvements. In the case of significant effects, Bonferroni post-hoc tests were applied to identify specific time points where differences occurred. The level of statistical significance was set at $p < .05$ for all analyses.

3. Findings and Results

The final sample consisted of 30 undergraduate students from various universities in Greece, with 15 participants assigned to the experimental group and 15 to the control group. Among the participants, 18 were female (60.00%) and 12 were male (40.00%). The mean age of the participants was 21.47 years (SD = 1.36), with ages ranging from 19 to 24 years. Regarding academic disciplines, 11 participants (36.67%) were studying social sciences, 9 participants (30.00%) were from natural sciences, 6 participants (20.00%) were enrolled in humanities programs, and 4 participants (13.33%) were from other academic fields. In terms of year of study, 10 participants (33.33%) were in their first year, 7 (23.33%) in their second year, 8 (26.67%) in their third year, and 5 (16.67%) in their fourth year.

Table 1

Descriptive Statistics for Goal Setting and Academic Persistence by Group and Stage

Variable	Group	Pre-Test (M ± SD)	Post-Test (M ± SD)	Follow-Up (M ± SD)
Goal Setting	Experimental	45.73 ± 5.19	58.60 ± 4.77	57.80 ± 5.12
	Control	46.20 ± 5.03	47.07 ± 5.29	46.53 ± 5.25
Academic Persistence	Experimental	34.87 ± 4.11	42.27 ± 3.65	41.40 ± 3.84
	Control	35.33 ± 4.35	35.80 ± 4.10	35.20 ± 4.27

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The descriptive statistics in Table 1 indicate that participants in the experimental group showed notable improvements in both goal setting and academic persistence from pre-test to post-test, with only a slight reduction at follow-up. In contrast, the control group exhibited minimal changes across the same stages. For example, the experimental group's mean score for goal setting increased from 45.73 (SD = 5.19) at pre-test to 58.60 (SD = 4.77) at post-test, and remained relatively stable at follow-up (M = 57.80, SD = 5.12). Similarly, academic persistence in the experimental group rose from 34.87 (SD = 4.11) at pre-test to 42.27 (SD = 3.65) at post-test and slightly declined to 41.40 (SD = 3.84) at follow-up.

Prior to conducting the repeated measures ANOVA, assumptions were tested and confirmed. The assumption of normality was evaluated using the Shapiro-Wilk test, which indicated non-significant results for all dependent variables at each time point (e.g., well-being at baseline: W = 0.968, p = .438; academic achievement at posttest: W = 0.951, p = .227), supporting the normal distribution of the data. The assumption of sphericity was tested using Mauchly's test and was met for both well-being (W = 0.974, p = .392) and academic achievement (W = 0.981, p = .443), indicating that the variances of the differences between time points were equal. Levene's test confirmed homogeneity of variances across groups (e.g., well-being at follow-up: F(1,28) = 1.724, p = .200), validating the equality of variances. These results confirmed that the data met all necessary statistical assumptions for repeated measures ANOVA.

Table 2

Repeated Measures ANOVA for Goal Setting and Academic Persistence

Variable	Source	SS	df	MS	F	p-value	Partial η^2
Goal Setting	Time	1852.61	2	926.31	31.74	<.001	.53
	Group	1184.47	1	1184.47	40.59	<.001	.59
	Time × Group	1643.80	2	821.90	28.17	<.001	.51
	Error	1582.40	56	28.26			
Academic Persistence	Time	964.13	2	482.07	24.89	<.001	.47
	Group	655.38	1	655.38	33.14	<.001	.54
	Time × Group	798.66	2	399.33	20.65	<.001	.42
	Error	1083.87	56	19.35			

Table 2 presents the repeated measures ANOVA results, confirming significant effects of time, group, and the interaction between time and group for both variables. For goal setting, there was a significant main effect of time ($F(2,56) = 31.74$, $p < .001$, $\eta^2 = .53$) and a significant group effect ($F(1,56) = 40.59$, $p < .001$, $\eta^2 = .59$), as well as a significant interaction between time and group ($F(2,56) = 28.17$, $p < .001$, $\eta^2 = .51$). Similarly, for academic persistence, the effects of time ($F(2,56) = 24.89$, $p < .001$, $\eta^2 = .47$), group ($F(1,56) = 33.14$, $p < .001$, $\eta^2 = .54$), and the interaction of time and group ($F(2,56) = 20.65$, $p < .001$, $\eta^2 = .42$) were all significant, indicating that the intervention was effective in producing change over time.

Table 3

Bonferroni Post-Hoc Test Results for Goal Setting and Academic Persistence

Variable	Comparison	Mean Difference	SE	p-value
Goal Setting	Pre-Test vs Post-Test	-12.87	1.64	<.001
	Pre-Test vs Follow-Up	-12.07	1.71	<.001
	Post-Test vs Follow-Up	0.80	1.33	.562
Academic Persistence	Pre-Test vs Post-Test	-7.40	1.18	<.001
	Pre-Test vs Follow-Up	-6.53	1.25	<.001
	Post-Test vs Follow-Up	0.87	1.02	.391

Bonferroni post-hoc comparisons in Table 3 show that for both goal setting and academic persistence, there were statistically significant increases from pre-test to post-test ($p < .001$) and from pre-test to follow-up ($p < .001$), while the difference between post-test and follow-up was not statistically significant ($p > .05$). These results indicate that the improvements achieved through the self-efficacy

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training intervention were maintained over the five-month period, with no significant decline in outcomes.

4. Discussion and Conclusion

The aim of this study was to investigate the effectiveness of a structured self-efficacy training program on enhancing goal setting and academic persistence among Bulgarian high school students. The results demonstrated a significant increase in both goal setting and academic persistence in the experimental group compared to the control group across post-test and five-month follow-up assessments. The repeated measures ANOVA showed a significant interaction effect between group and time, indicating that the self-efficacy training program led to sustained improvements in both dependent variables. These findings support the central hypothesis that strengthening self-efficacy through structured psychological intervention can positively impact students' motivational and behavioral outcomes.

The observed improvement in goal setting aligns with previous research highlighting the importance of self-efficacy as a driver of intentional and strategic goal pursuit in educational contexts. Students who developed a stronger belief in their academic competence during the intervention were more likely to set clear, attainable, and personally meaningful goals. This finding resonates with studies showing that self-efficacy fosters the willingness to engage in goal-oriented behaviors and helps students maintain commitment to long-term academic objectives (Ye, 2021). The incorporation of SMART goal-setting strategies in the intervention likely provided participants with a practical framework that enhanced their goal formulation skills and increased their confidence in achieving those goals, a pattern also reported in earlier work on academic coaching and performance-based interventions (Dattathreya, 2022).

Moreover, the significant increase in academic persistence in the experimental group can be interpreted through Bandura's theoretical lens, which posits that individuals with strong self-efficacy are more resilient and persistent in the face of challenges. The participants in the intervention group reported greater commitment to academic tasks and were more likely to sustain their efforts despite perceived difficulties. These findings are consistent with prior studies demonstrating that self-efficacy is a critical predictor of academic engagement and persistence behaviors (Basith et al., 2020). As students began to internalize beliefs about their ability to succeed academically, their motivation to continue working toward their goals—even in the face of setbacks—also increased, supporting earlier findings on the mediating role of self-efficacy in maintaining effort regulation (Macklem, 2020).

The long-term impact observed at the five-month follow-up suggests that the effects of the intervention were not merely immediate but had enduring influence on students' behavior. This sustainability aligns with the results of longitudinal studies that emphasize the long-term benefits of strengthening self-efficacy, particularly when supported by goal-setting and self-monitoring strategies (Rożnowski & Kot, 2020). The consistent use of goal-tracking and reflection exercises during the sessions may have helped participants internalize these habits, allowing the benefits to persist beyond the active intervention period. This is further supported by the evidence from technology-assisted goal tracking and reinforcement-based coaching models, which suggest that regular engagement with goal-related behaviors enhances both self-efficacy and long-term adherence (Dierikx et al., 2024).

Importantly, the results of this study also corroborate findings from international contexts, indicating that the psychological mechanisms underpinning self-efficacy and goal setting operate similarly across cultural and educational settings. For instance, research conducted in Asia and North America has demonstrated that self-efficacy interventions lead to better academic outcomes regardless of geographical location, provided they are tailored to the participants' developmental stage and contextual realities (Dong et al., 2020; Li, 2024). The Bulgarian high school students in this study responded positively to the intervention, suggesting that self-efficacy training can be successfully adapted for Eastern European educational settings, where student engagement and motivation are often affected by systemic and socio-economic challenges.

Additionally, the findings offer empirical support for the reciprocal relationship between goal setting and self-efficacy. The two constructs reinforced one another throughout the intervention period: as students gained clarity and structure in their goals, their self-confidence improved; and as their belief in their abilities grew, they set more ambitious and structured goals. This cycle has been well-documented in previous literature, emphasizing how self-efficacy not only influences goal setting but is also shaped by it (Gobbi, 2022; Saks, 2024). The mutual reinforcement of these two constructs forms a powerful mechanism for fostering academic self-regulation and performance enhancement.

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The structured nature of the intervention may have been a key contributor to its success. Each session targeted one or more of the four recognized sources of self-efficacy—mastery experiences, vicarious learning, verbal persuasion, and emotional regulation—as described in Bandura's framework. The use of modeling, peer discussions, and affirmations helped build verbal and observational pathways to confidence, while small academic challenges enabled students to experience success firsthand. This approach mirrors successful designs in other recent studies, such as those using gamification and reflective learning to promote self-efficacy in academic and professional contexts (Hoffmann, 2023; Mihalca et al., 2024).

The role of reflection in enhancing both self-efficacy and goal setting was also significant. Participants were encouraged to reflect on their successes, challenges, and learning strategies throughout the program. This metacognitive process likely helped students integrate their experiences and recognize patterns of effective behavior, which further reinforced their beliefs in their ability to succeed. Research has shown that reflective practices—especially when combined with structured planning and goal monitoring—can significantly enhance academic performance and self-efficacy beliefs (Chung et al., 2021).

In the context of vocational education, where confidence and clarity in goal setting are crucial for success, similar interventions have also shown strong outcomes. Students in vocational settings often face heightened anxiety and ambiguity regarding their future careers, which can negatively impact their academic motivation. However, interventions that combine goal clarity with self-belief enhancement have demonstrated improvements in student outcomes, a pattern mirrored in this study (Lokahitta & Affandi, 2023; Sutrisno & Arsanti, 2023). These findings suggest that the principles and strategies of self-efficacy training are broadly applicable and beneficial across educational tracks.

The influence of teachers' self-efficacy on student outcomes, although not the primary focus of this study, remains a crucial consideration for future intervention scalability. Teachers who believe in their instructional efficacy are more likely to model perseverance, provide constructive feedback, and support student autonomy—all of which contribute to students' own efficacy development (YentÜR, 2023). Therefore, institutional investment in both teacher and student self-efficacy development may produce synergistic benefits for academic performance and motivation.

Furthermore, this study contributes to the growing body of literature advocating for integrated models of academic motivation. The intersection of self-efficacy, goal setting, and persistence reflects a holistic framework of student development, wherein cognitive, emotional, and behavioral components interact to shape academic outcomes. Studies in educational psychology continue to emphasize that fostering these internal capacities leads to more resilient, autonomous, and successful learners (Taylor et al., 2024; Zam et al., 2024). These insights are particularly relevant in the current global educational landscape, where students must adapt to shifting learning environments and increasing academic demands.

5. Limitations & Suggestions

While the findings of this study are promising, several limitations should be acknowledged. The sample size was relatively small and drawn from a single geographical location, which may limit the generalizability of the results. Cultural and systemic factors specific to the Bulgarian educational context may have influenced participants' responsiveness to the intervention. Moreover, the study relied on self-report measures, which may be subject to social desirability bias or inaccurate self-perceptions. Another limitation is the lack of long-term data beyond the five-month follow-up, making it difficult to assess whether the observed effects were sustained over a full academic year or more. Additionally, the control group did not receive any form of active placebo or alternative intervention, which limits the ability to differentiate between specific intervention effects and general attention effects.

Future studies should consider expanding the sample size and including participants from diverse educational and cultural contexts to enhance the external validity of the findings. It would also be valuable to incorporate mixed-method approaches that include qualitative interviews or focus groups to gain deeper insights into the subjective experiences of participants. Further research could examine the differential effects of specific components of the intervention—such as mastery experiences versus peer modeling—to identify the most influential elements. In addition, future investigations could explore the role of parental or teacher involvement in reinforcing self-efficacy beliefs at home or in the classroom. Longitudinal studies extending beyond a five-month follow-up would help assess the durability of intervention effects and their influence on

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broader educational outcomes such as graduation rates and career readiness.

Educational practitioners should consider incorporating structured self-efficacy training programs into the school curriculum, especially for students who exhibit low academic motivation or face persistent academic challenges. These programs should include goal-setting exercises, reflective journaling, and regular feedback sessions to foster metacognitive awareness and intentional learning behavior. Teachers and school counselors can be trained to facilitate such interventions and reinforce self-efficacy principles in their daily interactions with students. Additionally, integrating digital tools for goal tracking and progress monitoring can enhance students' engagement and accountability. Ultimately, fostering a school-wide culture that promotes belief in personal competence, effort, and resilience can significantly enhance students' academic trajectories and emotional well-being.

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Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethics Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors contributed equally.

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