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Self-Talk as A Psychological Strategy for Enhancing Student Engagement in Physical Education: A Systematic Literature Review

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A B S T R A C T

This study aimed to identify factors that influence student learning outcomes and motivation in Physical Education through a systematic literature review. This study identified 577 research articles from Scopus database and SAGE publications published from 2014 to 2024. The article selection process used PRISMA flow diagram. According to the screening and eligibility review, five papers met the analytic requirements. The results of analysis show that a motivating environment promotes a sense of competency and participation as well as persistence in goal orientation. It also shows that self-talk helps students manage anxiety and boosts confidence. In addition, the use of technology, such as video-based learning, improves student understanding leading to increased engagement in Physical Education. Studies also show that self-talk is helpful for learning Physical Education. It can be a mental strategy, a tool for controlling emotions, and a reflection tool. Self-talk can help with anxiety management, confidence building, skill evaluation enhancement, and physical activity performance. Positive self-talk, technology, and inspiring surroundings could assist Physical Education process to be more accessible and successful. Therefore, this study underlines that psychological tactics must be included into Physical Education programs in schools to improve the student physical, cognitive, and emotional involvement.

A R T I C L E   I N F O

INTRODUCTION

Self-talk (ST) is a cognitive learning strategy or internal dialogue that can help children focus, motivate, instruct, encourage, and prepare for performance in various environments and situations (D. Cutton & Hochstetler, 2021). Self-talk is a statement directed at oneself and multidimensional in nature that can be opened or closed, positive or negative, serving as self-instruction (Hidayat & Budiman, 2014); (Latinjak et al., 2023). Therefore, convincing ourselves by saying, "I have trained well and prepared for this match", is also an effort (Wallentin & Nedergaard, 2023). Other examples of self-talk include "I believe in my abilities and will give my best" and "every practice makes me stronger and more ready for this challenge" (Jones & Mattie, 2024).

Self-talk is divided into two types, namely instructional self-talk and motivational self-talk. Motivational self-talk is the statement made to facilitate performance by enhancing confidence and energy expenditure, expanding efforts, and evoking a positive mood. In contrast, instructional self-talk helps performance by initiating the desired movement by focusing on motor skill tactical and technical aspects (Van Raalte et al., 2016). This aligns with other research showing that the ST strategy has instructional (IS.T.) and motivational (MS.T.) functions (Hatzigeorgiadis & Galanis, 2017). IS.T consists of specific instructions for developing motor skills and general instructions for performance improvement and playing strategies. Meanwhile, M-ST consists of arousal, mastery, and motivation function drives, each of which can be used to manage arousal levels, enhance attention, concentration, and confidence, and increase motivation and efforts (Hidayat, 2019).

Self-talk needs to be studied in Physical Education because there are differences between Physical Education students and professional athletes. Professional athletes usually have clear goals and strong discipline in their training, while school students have varying levels of motivation and skills (Hidayat et al., 2023). While some students enjoy physical activities, others may feel anxious, lack confidence, or be less motivated to attend the class. Physical Education has unique challenges, such as the diversity of student motivation levels, differences in learning objectives (competitive vs. participatory), and constraints of the learning environment. Existing studies need to more thoroughly explore how self-talk can be adapted to the dynamics of Physical Education, particularly for students with varying needs and levels of ability. In Physical Education, student engagement is an essential element that affects learning efficacy, such as achieving physical, social, and emotional learning objectives (Webster, 2023). Psychological strategies, such as self-talk, should be applied systematically and effectively to help students improve their motivation, focus, and active participation in Physical Education activities (de Matos et al., 2021). Self-talk has excellent potential to be a tool for overcoming internal obstacles, including lack of self-confidence, anxiety, and low motivation, thereby supporting the holistic student engagement (Parker et al., 2018).

However, the factual condition shows that implementing self-talk in Physical Education is not optimal. Current research focuses more on the context of sport achievements, but more research examining how self-talk can help students engage in Physical Education is needed. In addition, consistent guidelines on incorporating self-talk into Physical Education teaching is also necessary. Many Physical Education teachers need supports in understanding how to use self-talk as a psychological tool to help students. The diversity of student motivation levels and abilities is another factor to be considered in Physical Education (Hills et al., 2015). Another issue is that students often need more confidence or motivation to engage actively, especially those who do not enjoy physical activities or feel left behind by their peers (F. Wang et al., 2014). In this context, the potential of self-talk to bridge the gap between student

psychological needs and their active engagement has yet to be widely utilized. Physical Education is essential in building student physical, mental, and social health. Low student engagement can reduce these benefits, such as a lack of motor skill mastery and low positive attitude toward sports (Park et al., 2020). Effective psychological strategies must be used to enhance student motivation and participation in Physical Education to address this issue. As a form of internal dialogue, self-talk can help students become more confident, reduce their anxiety, and remain motivated and focused while exercising. Thus, self-talk can be a great way to ensure that students benefit from Physical Education. Self-confidence is one of the most important things for every human being because, with self-confidence, one can perform any activity without feeling disturbed or anxious and feel free to do anything that aligns with one desires (McGrane et al., 2016).

Therefore, discussing self-talk strategies can be an effective tool to enhance student self-confidence and performance, control their anxiety, and help them actively participate in Physical Education. Through self-talk, students can transform negative mindsets into positive ones, creating a more supportive environment for learning and development. Regarding sport performance, previous research has extensively discussed self-talk. Previous research had emphasized how this strategy could help manage athlete emotions, focus, and motivation, thereby improving their performance (Van Raalte et al., 2016); (Hatzigeorgiadis & Galanis, 2017). According to other studies, self-talk could increase confidence and reduce anxiety during exercise (Hidayat & Budiman, 2014); (de Matos et al., 2021). On the other hand, research shows that the use of technology, goal orientation, and motivational climate affect the quality of sport learning (Marjanović et al., 2019); (Huhtiniemi et al., 2022). The benefits of self-talk have been extensively studied in sports. However, research specifically examining the benefits of self-talk in Physical Education is scarce, including research on how to use self-talk to enhance student engagement in sport learning. Most studies focused on improving athlete performance. In addition, there are no systematic standards explaining how self-talk can be effectively used in the Physical Education curriculum. Current research is also dominated by short-term experimental approaches, so there has not been a comprehensive explanation of the long-term impact of self-talk on student engagement in Physical Education.

Using the systematic literature review (SLR) method, this research examined the self-talk functions as a psychological strategy to enhance student engagement in Physical Education. The research also investigated how Physical Education activities could help students overcome anxiety and boost their self-confidence and examined the role of self-talk as a learning method to help students evaluate and improve their motor skills. For this reason, this study is expected to be useful for instructors, researchers, and educators who are interested in integrating psychological tactics to increase the student involvement and motivation for improving their efficacy in Physical Education.

METHODS
Procedure

This research used a systematic literature review (SLR). A Systematic Literature Review (SLR) is a systematic method that collects, sorts, analyses, and interprets relevant studies from published literature from various sources, focusing on the appropriate research theme (Sauer & Seuring, 2023). In this case, the study focused on the role of self-talk as a psychological strategy for enhancing student engagement in Physical Education. The procedures for this process involved the identification of the scope of the literature, types of studies to be included, research subjects, data analysis, and findings to obtain a deep and comprehensive understanding of self-talk in Physical Education context. Additionally, this method enhances

the validity of the research results by filtering studies using strict inclusion and exclusion criteria, ensuring that only relevant and high-quality research is analyzed (Ryan et al., 2024).

This research focused on obtaining a solid theoretical and empirical foundation on self-talk in Physical Education, which has not been widely studied. Using SLR, researchers can gather evidence and draw conclusions based on data (Palomino et al., 2019). The results of this research can be used by Physical Education and Psychology practitioners to develop programs that enhance student engagement through psychological strategies, namely self-talk. This method involves a structured process to identify, evaluate, and summarize relevant research to answer the research question (Pati & Lorusso, 2018). We also assessed original journal articles through peer review in this research. The Covidence application allowed research teams to review and assess the relevance of articles with a voting system, ensuring objectivity in the selection process. The search process followed the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Sarkis-Onofre et al., 2021). An overview of the process can be found in (Figure 1), while the detailed protocol for the systematic review followed (Rethlefsen et al., 2021).
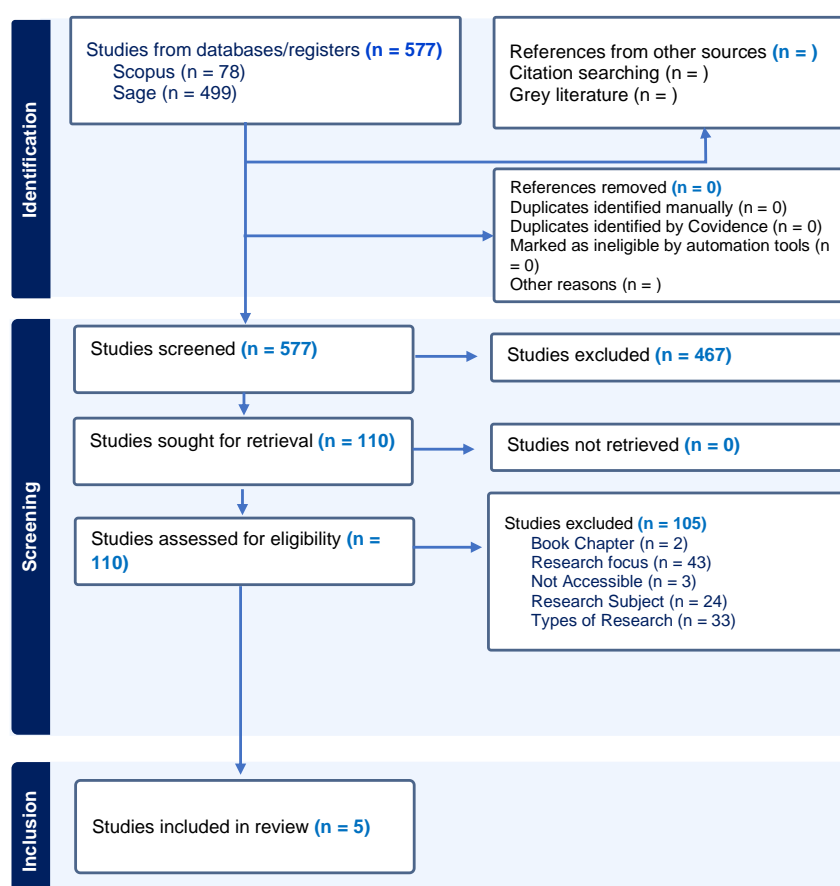

Figure 1. Study Search and Selection Process Using PRISMA Flow Charts

Search Process

The data search process in this study was conducted using the Systematic Literature Review (SLR) method, focusing on the Scopus and Sage academic databases. The search was limited to 2014 to 2024 and commenced on October 28, 2024. Based on the initial search, 577 articles relevant to the topic were found. The search included various combinations of terms, such as "self-talk", "motivational climate", and "Physical Education."

The selection stage was conducted to ensure the articles comply with the predetermined inclusion and exclusion criteria (Table 3). This selection process was facilitated using an

application (https://www.covidence.org/), which allowed researchers to sort and evaluate articles efficiently and systematically. The application helped manage selected articles and document each selection step, thus only high-quality articles that met the criteria would enter the final analysis process (Harrison et al., 2020).

Based on the PRISMA guidelines, Covidence supports the PRISMA process and checklist, allowing researchers to conduct a systematic and organized review to ensure that it meets international standards. Covidence helps by automating duplicate screening, facilitating the screening process, providing eligibility assessment tools, and supporting transparent documentation. This literature design was taken from (https://www.elsevier.com/products/scopus) and (https://sk.sagepub.com/) to answer the research question. This systematic review protocol explained how to review and synthesize relevant literature. The Population, Intervention, Comparison, and Result (PICO) framework was used to organize the research findings (Table 1). This framework was based on the main research question (Methley et al., 2014). Data from secondary research questions were obtained from eligible publications identified for the primary research question. This protocol used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocol (PRISMA-P) checklist, while the PICO protocol addressed each database and consisted of required components (Brown, 2020), including P (Population), I (Intervention), C (Comparison), and O (Outcome).

Table 1. PICO Framework for Identifying Studies Relevant to the Main Research Question

PICO Components	Explanation
Population	Elementary and middle school students participating in Physical Education and sport activities
Intervention	The use of self-talk strategies in Physical Education learning
Comparison	Students who did not use self-talk strategies
Outcome	Improvement in student self-confidence, performance, anxiety management, and student engagement in Physical Education learning through self-talk strategies

Table 2. Search Strategy for Each Database

Database	Search Strategy (Keywords + Boolean Operators)	Search Filter
Scopus	("self-talk" OR "internal dialogue") AND ("psychological strategy" OR "mental technique") AND ("student engagement" OR "learner participation") AND ("physical education" OR "sports education")	- Year of publication: 2014 to 2024 - Document type: Journal Article - Language: English - Field of study: Psychology, Education, Sports
SAGE	("self-talk" OR "self-dialogue") AND ("psychological intervention" OR "mental strategy") AND ("student engagement" OR "academic engagement") AND ("physical education" OR "sport pedagogy")	- Year of publication: 2014 to 2024 - Type of publication: Peer-Reviewed Journal - Language: English - Subjects: Education, Psychology, Sports

Data Extraction and Quality Assessment

Important information from each article was identified to extract data in this study. The information included population, research context, language, psychological variables, and roles of self-talk. The Covidence application was used to process each article that met the inclusion criteria, allowing researchers to collect and organize data from various studies systematically. To ensure the validity, reliability, and relevance of each included article, critical appraisal guidelines were used to assess its quality during the assessment. Data were collected through trial forms. The systematic literature review considered various research designs based on the following inclusion criteria.

Table 3. Inclusion and Exclusion Criteria

Criteria	Inclusion	Exclusion
Type of Study	Empirical studies, research articles, and literature reviews relevant to the role of self-talk in Physical Education	Opinion articles, editorials, and descriptive studies that do not involve empirical data or are not relevant
Subject	Research involving students as the main subjects	Research that does not involve students or focuses on other subjects, such as professional athletes
Language	Article in English	Articles published in languages other than English
Year Range	Research published in the last 10 years, from 2014 to 2024	Research published before 2014
Research Context	Focus on Physical Education or sports in the school context	Research outside the context of Physical Education or sports in schools, such as professional sports
Psychological Variables	Discussing self-talk as a primary variable or an essential component in psychological strategies	Not discussing self-talk or only mentioning it briefly without in-depth analysis
Research Results	Research evaluating the effects of self-talk on student engagement in physical activities	Research that does not evaluate the effects of self-talk on student engagement

From the 577 identified articles in the first stage, 467 articles were eliminated because they did not meet the eligibility criteria. For instance, 190 articles focused on competitive sports and athlete performance; 120 articles discussed opinion reviews and book chapters and lacked of empirical data; 85 articles conducted research on athletes and students not in school settings or Physical Education learning; and 72 articles used descriptive approach without empirical data or quantitative data supporting the research findings.

In the second stage, 110 articles were re-selected for further analysis, resulting in 105 articles being excluded because 3 articles could not be fully accessed, 43 articles did not deeply discuss the student involvement in the role of self-talk, 24 articles did not involve suitable populations, such as higher education level students or special students (such as gifted athletes), and 33 articles were irrelevant due to the use of exploratory methods or

interviews that did not provide systematic data. Based on this consideration, only five articles were relevant and met the research criteria. The articles that passed the analysis mostly focused on using self-talk in Physical Education and discussing aspects of motivation, student engagement, and the effectiveness of psychological strategies in school Physical Education learning environment.

The Covidence application was used during the selection process, allowing for systematic screening based on established standards. Articles that passed the selection process were further processed to obtain the data. In addition, the content analysis of the included articles in this review was conducted. After that, the data were discussed and confirmed. The author names, titles, year of publication, country, methods, results, and research objectives are categorized as follows.

RESULTS

This PRISMA flow diagram shows the stages of the article selection process in a systematic review. At the identification stage, 577 studies were obtained from the Scopus and Sage databases without any additions from other sources, such as citation searches or grey literature. No references were removed due to duplication or marked as ineligible by the automatic tool. Although Covidence could accelerate and simplify the PRISMA-based article selection process, data screening still might face several challenges, particularly regarding article relevance, methodological quality, study accessibility, and flexibility in adjusting selection criteria. Therefore, Covidence is considered effective as a supporting tool rather than the sole selection method. To ensure the quality and accuracy of systematic review results, researchers still conducted manual evaluations.

The number of articles published in this study showed that less research had been conducted on self-talk in Physical Education than in competitive sports. This indicates that more research should examine how self-talk can be used in Physical Education to enhance student engagement.

Table 4 explains that 5 relevant empirical articles were obtained on this topic. The analysis results found that various factors, namely motivational climate, goal orientation, self-talk, and the use of technology in learning, could influence student learning outcomes and motivation in Physical Education.

Type of Research

Based on the review of categories and types of research, three articles exclusively used quantitative approach (Marjanović et al., 2019); (Zourbanos et al., 2014) and (Huhtiniemi et al., 2022). Two of the three articles used surveys with questionnaires for their research. Using surveys can make it easier for researchers to collect data in only one session (Gorter et al., 2015), because answering research questions may take days, weeks, or even months to complete (Moen, K., & Middelthon, A. L., 2015). Then, the following article used qualitative approach (McEvilly et al., 2015). The article used participant observation and interviews conducted at the beginning and end of the research. Furthermore, the next article used mixed approach (quantitative and qualitative) (Trabelsi et al., 2022). The article used a Written Test and was conducted through an experiment implementing seven gymnastics learning sessions, including pre- and post-intervention testing.

From the finding of this research, the quantitative method was more dominantly used because it could objectively measure the impact of self-talk on student engagement.

Code	Author and Year	Empiric Design						Source and Database
		Country	Sample	Type of Research	Main Variables	Research Objectives	Results	
01	(Marjanović et al., 2019)	Greece	The study involved more than 500 samples.	Non-experimental research with a cross-sectional design (quantitative), using questionnaire	Perception of motivational climate, goal orientation, and self-talk	Exploring the complex relationship between motivational climate, goal orientation, and self-talk in the Physical Education context	Showing the relationship between motivational climate, goal orientation, and self-talk in Physical Education	Motivation and Emotion Journal/ Scopus (Q1)
02	(Zourbanos et al., 2014)	England	We listed two studies with different sample sizes. Study 1 had a sample size of 628 participants, while Study 2 had a sample size of 313 participants.	Confirmatory factor analysis (CFA) to test the factor structure of the self-talk dimension in Physical Education, using quantitative survey with questionnaire	"Achievement goals" and "self-talk" in the Physical Education context	Investigating the relationship between achievement goals and self-talk in Physical Education and understanding how self-talk could mediate achievement goal theory and cognitive, affective, or other behavioral responses	The eight-factor model of self-talk has good internal consistency, except for the "irrelevant thoughts" factor.	Motivation and Emotion Journal/ Scopus (Q1)
03	(McEvilly et al., 2015)	Scotland	It comprised 14 adults and 70 children aged between three to five years.	Qualitative, with an observational and interview approach	The involvement of practitioners and children with the discourse on physical activity and health in preschool	Exploring how practitioners and preschool children engaged with discourse related to physical activity and health	Practitioners and preschool children engaged in discourses on physical activity and health in complex and diverse ways.	British Journal of Sociology of Education/ Scopus (Q1)

Code	Author and Year	Empiric Design						Source and Database
		Country	Sample	Type of Research	Main Variables	Research Objectives	Results	
04	(Trabelsi et al., 2022)	Tunisia	56 high school students, consisting of 28 male students and 28 female students	Mix-Method (quantitative and qualitative), with written tests conducted through an experiment with seven gymnastic learning sessions, including pre-and post-intervention testing	The effectiveness of video-based learning model in Physical Education was measured through student learning outcomes and learning strategies.	Evaluating the effectiveness of video-based learning models in improving student learning outcomes in Physical Education, particularly in the gymnastics context	The video-based learning model effectively enhanced student learning outcomes in Physical Education	European Physical Education Review/ SAGE (Q1)
05	(Huhtiniemi et al., 2022)	Finland	645 participants, consisting of 328 fifth-grade students and 317 eighth-grade students	Quantitative, with a Competency Scale, Anxiety Scale, 20-meter shuttle run test (PACER), push-up test, curl-up test, and 5-jump test for locomotor skills and combination of throw-catch test for object control skills	Motivation climate, perceived competence, physical performance, and affect during Physical Education lessons	Investigating the direct and indirect relationships between a motivational environment involving task and ego, perceived physical competence, physical performance, enjoyment, and anxiety during Physical Education fitness testing lessons	The importance of creating a task-focused motivational climate in Physical Education	European Physical Education Review/ SAGE (Q1)

However, qualitative method still played an important role in complementing the quantitative results, especially for understanding student subjectivity, psychological mechanisms, and social and emotional factors influencing the effectiveness of self-talk. It infers that these two methods are crucial for a holistic and practical understanding of Physical Education.

Purpose, Content, and Result

In this study, we examined the objectives, content discourses, and the developed results. We found that the motivational climate and goal orientation were essential in building student positive self-talk. Task goal orientation had a lower relationship with positive self-talk and the motivational climate mediated goal orientation and self-talk. This emphasizes the critical role of teachers in creating a supportive classroom environment for students (Marjanović et al., 2019).

The second article focused on self-talk, highlighting that student with a task orientation more frequently exhibited positive self-talk. Positive self-talk helped improve student motivation and performance in Physical Education, thus it is recommended that teachers and parents focus student attention on task achievement rather than self-achievement. For this reason, task orientation can provide students with the opportunity to enjoy physical activities as a way to improve themselves (Zourbanos et al., 2014).

The third article focused on preschool child understanding of physical activity and health. The research results showed that children could understand physical activity based on what they experienced with their bodies, such as feeling an increase in strength and energy. Moreover, this research showed that the current economic, social, and cultural discourse influences child understanding of health (McEvilly et al., 2015).

The fourth article discussed the benefits of technology in Physical Education, mainly how videos could be used as a learning model. The research results showed that video-based learning models improved student motor and cognitive abilities, especially in gymnastics. Video-based learning models also allowed students to use self-talk as a self-learning strategy, which helped them evaluate and improve their skills. This article suggested that technology could play essential roles in Physical Education because it helped students learn independently (Trabelsi et al., 2022).

The fifth article discussed the relationship between motivational climate (task-involving and ego-involving), perceived competence, physical performance, enjoyment, and anxiety during Physical Education fitness tests. Research showed that a task-involving motivational climate and higher perceived competence increased enjoyment and reduced stress, while an ego-involving environment increased anxiety without affecting enjoyment. This research emphasized the importance of creating an environment involving tasks and enhancing student perceived competence during PE fitness tests (Huhtiniemi et al., 2022).

Overall, these five articles emphasized the importance of teacher supports on student learning outcomes in Physical Education through task-oriented goal setting, self-talk, and positive environment. Video-based learning technology used self-talk strategies to enhance student skills and motivation. In general, studies using different methods tend to reach similar conclusions about the benefits of self-talk. They differ in explaining and measuring its effects. While qualitative approach provides a deeper understanding of how students use and understand self-talk in Physical Education, quantitative approach offers stronger evidence of
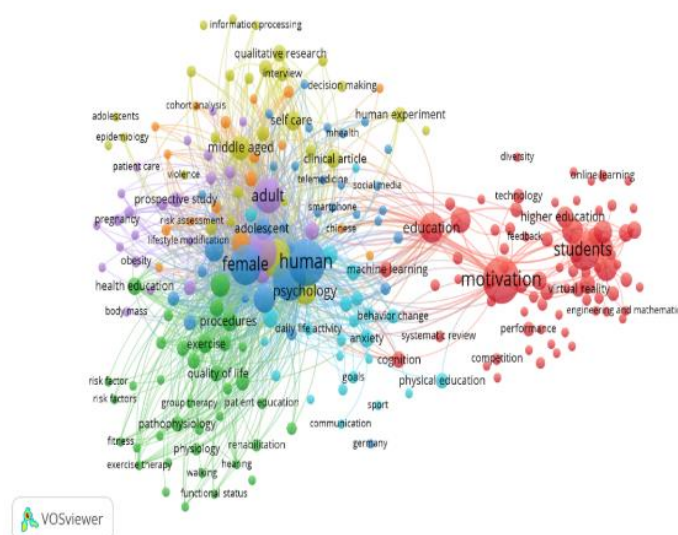
the relationship between self-talk and student engagement. Therefore, combining these two approaches can provide a broader understanding of the role of self-talk in enhancing student engagement.

The results identified five research articles to be included in the review. The five articles were evaluated in several aspects of the role of self-talk strategies in Physical Education learning. The research locations covered five countries, with the population sample being school students. After collecting metadata from databases, specifically Scopus and Sage, the metadata was stored in RIS file format. The RIS format was then uploaded to the Covidence website to compile a PRISMA, resulting in a final set containing five articles evaluated for its quality using the Mendeley application. The analysis was then conducted using the VOSviewer application. The data visualization is presented in Figure 2.

Figure 1. Overlay Visualization

Figure 2 shows the results of the overlay visualization categorizing the publication years of the articles. Through the overlay visualization tab sheet, Vosviewer can display the latest trends. Based on the emergence of keywords, the intensity of connections, and the relevance of topics within the research network, this visualization shows research trends from 2014 to 2024. The themes more frequently discussed in the earlier years (around 2014–2016) are shown in blue. The initial research focused more on essential topics, such as "human", "female", "adult", and "psychology". Additionally, there was also a focus on health aspects, such as "health education", "exercise", "lifestyle modification", and "physiology", and more conventional topics, such as epidemiology, public health, and activities. Although Physical Education began to be discussed in health and fitness, it was still limited to physical exercise. It paid less attention to mental aspects, such as self-talk or motivation.

Figure 2.Network Visualization

Figure 3 depicts the engagement of study subjects from 2014 to 2024. The nodes represent the frequency and trends of topics through color and size. The lines connecting the nodes illustrate the relationships or correlations among the topics. In 2014–2016, research trends began, marked by the blue color, and indicated that research on general health elements, such as "health education", "exercise", and "quality of life" focused on physical health and the benefits of physical activity for quality of life. In addition, little research had been conducted on the function of psychological strategies, such as self-talk in Physical Education. The focus of the topic was the integration of psychological strategies and technology in Physical Education. They also started to talk a lot, especially about "students" and "performance", showing how Physical Education helped students improve their skills. Then, the modern period, from 2021 to 2024 marked in red, showed the use of technologies such as "virtual reality", "machine learning", and "online learning" to support learning, including Physical Education. To help students in the context of "higher education" and "physical education," the research combined technology-based approaches and psychological strategies, such as personal conversations to enhance their learning experience.
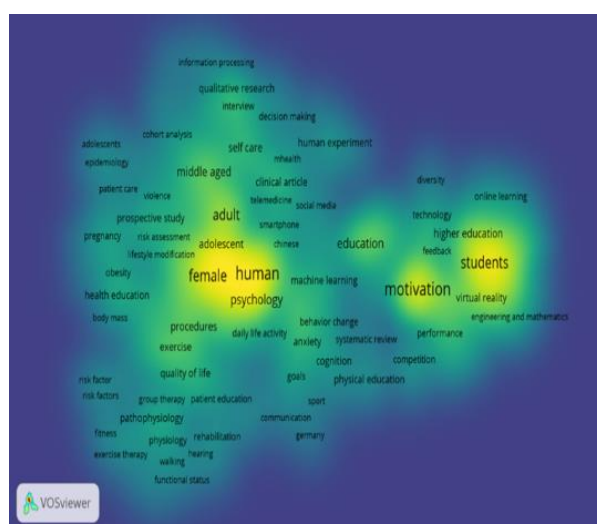

Figure 3. Density Visualization

Figure 4 shows the density map and essential terms in research related to the role of self-talk strategies in Physical Education. The highlighted regions in yellow imply the utmost density or the most visible and pertinent keywords throughout the study. On the contrary, blue represents the thinnest density or the least visible keywords. In this case, from 2014 to 2016 and marked in blue, the research on how "human", "female", "psychology", and "health education" were related to woman physical and mental well-being, particularly human beings at large. From 2017 to 2020, the focus of research was how motivation and education were interrelated and the position of physical culture within them. Words such as "motivation," "students," "education," "behavior change", and "anxiety" suggest that there was an increased focus on the psychological components of students during learning. Then, from 2021 to 2024, topics such as "motivation", "students", and "physical education" increased and became the main focus. "Self-talk" has also become a vital keyword, indicating a growing interest in mental strategies to enhance student performance, including Physical Education, which is increasingly connected with technological advancements such as virtual reality and online learning. "Cognition", "competition", and "performance" also became areas of focus, each concentrating on enhancing student skills and experiences through new approaches.

DISCUSSION

Analysis of the articles found several articles discussing how self-talk affected student engagement in physical activities. One the five articles discussed how self-talk could enhance student engagement in physical activities. This might be because students who use self-talk tend to be more interested in actively participating in their learning activities (C. Wang et al., 2017). Additionally, it was mentioned that self-talk could help students organize their learning understanding and engage more in physical activities (Huhtiniemi et al., 2022). Self-talk also enhances student engagement, motor skills, and physical activity performance (Liu et al., 2022). Another study mentioned that self-talk also functioned as a metacognitive strategy that would help students plan and evaluate their progress, ultimately increasing their engagement in learning (Trabelsi et al., 2022); (Goudas et al., 2017).

The Role of Self-Talk as a Mental Strategy for Improving Performance in Physical Education Learning

In this case, self-talk is a mental strategy that can enhance sport learning outcomes. This can happen because students are more likely to engage actively in learning and physical activities when using supportive self-talk. However, the type of self-talk students use will also influence the motivational climate created by the teacher. By creating a positive environment, teaching self-talk techniques, providing examples, and encouraging reflection, teachers can help students become more optimistic, confident, and focused in every physical activity. Student engagement will increase when a supportive or mastery climate encourages positive self-talk (Zarrett et al., 2015). Positive self-talk can also enhance student physical performance, especially athletes, while negative self-talk cannot (Horcajo et al., 2024). Moreover, self-talk also serves as a link between motivational climate and achievement goals. In other words, self-talk itself can help balance the influence of the environment created by the teacher on how students interact with physical activities (Trabelsi et al., 2022). Positive self-talk can enhance student engagement and improve their experience and learning in Physical Education by increasing their confidence and enjoyment in physical activity (Marjanović et al., 2019).

Moreover, practitioners are crucial in enhancing child comprehension, particularly regarding health and physical exercise. They encourage children to participate in physical

activities, creating an environment where positive self-talk can develop. Practitioners will also teach children the basic concepts of health and physical activity, which will help them understand what health and physical activity are (Huhtiniemi et al., 2022). Ultimately, how health discourse is conveyed and received in the school environment will influence child understanding and engagement in physical activities (McEvilly et al., 2015).

The Role of Self-Talk in Helping Students Overcome Anxiety and Boost Self-Confidence

The study offers evidence that self-talk, exceptionally positive self-talk, can be employed by students to enhance their performance during sport tasks, manage anxiety, increase their motivation towards the task at hand, and increase their confidence. This is possible since cognitions or positive self-talk could give students the courage to face their fears and enhance their concentration on the tasks (Marjanović et al., 2019). Self-talk, although internal, can be defined as a self-regulation strategy that students use to control their thoughts and emotions while performing physical activities. Students who do self-affirm through self-talk have an enhanced perception of their ability to take risks, increasing their levels of attention and engagement in Physical Education. Some also mention that the student engagement in self–talk is about their perceived competence (Nedergaard et al., 2021). For example, students who feel more competent tend to be more actively engaged in learning and use positive self-talk, which supports their involvement in Physical Education.

However, student self-talk will be affected when they compete against more skilled opponents. Positive self-talk may enhance motivation, but negative self-talk related to anxiety can also increase (Kim et al., 2021). Self-talk benefits sport learning by affecting student motivation and cognitive, behavioral, and affective aspects (Zourbanos et al., 2014). Those who engage in physical activities can strengthen their self-confidence with self-talk that helps them keep trying, overcome fatigue, and stay focused (McEvilly et al., 2015). Positive statements can also help students become more prepared and confident when speaking in public. This is because, especially in groups, positive statements make students feel supported, which help them reduce pressure and anxiety (Shadinger et al., 2020). Teachers might lead pupils to repeat positive affirmations before beginning motor activities, helping them to get ready both physically and psychologically. Pre-performance routine, such as "take a deep breath, relax, and push my legs as hard as possible when I start running" for advising someone going to a 100-meter dash sprint, can be a self-affirmation technique to increase confidence.

The Role of Self-Talk as a Learning Strategy to Help Students Evaluate and Improve Their Skills

Self-talk has a dual role in countering one anxiety while increasing their confidence in facing challenges. Deep self-talk can be utilized as one of the learning strategies for self-evaluation and the formation of objectives among students. Self-talk allows students to assess their motor skills by enhancing automatic control over their movements, indicating that self-talk creates a learning environment that supports confidence enhancement (Nasiri & Shahbazi, 2018). As revealed in this study, self-talk is considered a metacognitive tool used by students to plan, monitor, and evaluate their progress during learning, thereby enhancing their learning efficacy. It is also regarded as one of the main strategies for regulating their learning process, with steps involving frequent self-talk to compare their performance in lessons (Trabelsi et al., 2022).

Through self-talk, students can also identify weaknesses in their performance by reflecting on successful parts and parts that need improvement to help them enhance self-awareness

and reflection (Marjanović et al., 2019). Self-talk also helps students become more aware of their learning process by identifying and reflecting on the self-talk they use. They can understand how mindset can affect performance and help them recognize and correct mistakes and overcome challenges (D. M. Cutton et al., 2015).

Self-talk is essential as a cognitive strategy in enhancing Physical Education learning performance. Self-talk motivates students to take action and improve their physical performance. They develop a supportive atmosphere for the students to overcome their nervousness and gain confidence. Self-talk also acts as a metacognitive tool for learners to plan, monitor, and evaluate their activities as well as themselves. In this way, self-talk improves both the academic and self-awareness of students.

Limitations of The Research

From a total of 577 collected articles, only five articles met the eligibility criteria for further analysis. This number is insignificant. Therefore, the results may not reflect the complexity and variation of self-talk in Physical Education. Compared to Physical Education, previous focus had only been directed towards research on self-talk in competitive sports. This has resulted in very few findings in the literature review on Physical Education learning. Moreover, because the reviewed studies were short in duration, it is impossible to extend the research on self-talk and student participation in Physical Education classes over a more extended period.

In this study, only two databases, Scopus and SAGE Journal, were used to search for data sources. Other related studies located in unindexed journals or databases were not presented. More research is also needed on the role of self-talk in Physical Education during exercise. For contextual coverage, a broader methodological perspective and further investigation are required to strengthen the evidence on the role of self-talk as a psychological strategy in Physical Education. This research chose Scopus and SAGE Journal as the main databases due to their credibility, academic quality, topic relevance, and the availability of up-to-date research. These two databases ensure that only high-quality and evidence-based studies that meet international academic standards are used for analysis, thereby enhancing the validity and reliability of the research results.

CONCLUSION

Self-talk has proven to be a crucial mental strategy to improve student performance while engaging in sport activities. It helps students stay alert, set goals, and practice other physical activities related to technical and tactical aspects. Research shows that well-articulated self-talk can increase student motivation and consistency in facing physical challenges, which ultimately improves performance in Physical Education. After teaching, the teacher can ask students to write or talk about their experiences, focusing on how self-talk helped them. This exercise helps students understand and develop the habit of speaking positively by asking reflective questions. The teacher can also provide examples of self-talk that students can use in various situations. To build the positive speaking habit, students can read and repeat this scenario before or during physical activity. Self-talk in students is vital to recover from anxiety and develop confidence in a particular activity. Positive self-talk techniques can help students to be calmer in high-stress or low confidence situations during activities. The active participation of students in physical activities can also lead to the development of student attitudes. Studies show that students who frequently practice self-talk can better manage their anxiety and actively participate in class with more confidence.

Self-talk allows learners to analyze and improve their bodily abilities, which may also help them remember specific instructions or techniques that help in accurately executing movements, understanding and correcting mistakes without assistance, and assisting learners in obtaining targets. Self-talk in exercise is beneficial in many ways. It can be used to improve performance as a cognitive, emotional control, and reflection strategy. Self-talk helps students in practice and sports and helps them learn, solve problems, and manage emotions in everyday life. Students can also remember ideas better and stay motivated during the learning process by talking to themselves.

AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. The authors confirmed that the paper was free of plagiarism.

REFERENCES

Brown, D. (2020). A review of the PubMed PICO tool: using evidence-based practice in health education. Health promotion practice, 21(4), 496-498.

Cutton, D., & Hochstetler, D. R. (2021). The use of self-talk: Teachers and coaches help foster a student's true self. Journal of Physical Education, Recreation & Dance, 92(4), 42-47.

Cutton, D. M., Killion, L., & Burt, D. (2015). Self-Talk repertoire of physical education teachers: Awareness, reflection and action. Journal of Physical Education, Recreation & Dance, 86(8), 22-26.

de Matos, L. F., Bertollo, M., Stefanello, J. M. F., Pires, F. O., da Silva, C. K., Nakamura, F. Y., & Pereira, G. (2021). Motivational self-talk improves time-trial swimming endurance performance in amateur triathletes. International Journal of Sport and Exercise Psychology, 19(3), 446-459.

Gorter, R., Fox, J. P., & Twisk, J. W. (2015). Why item response theory should be used for longitudinal questionnaire data analysis in medical research. BMC Medical Research Methodology, 15, 1-12.

Goudas, M., Dermitzaki, I., & Kolovelonis, A. (2017). Self-regulated learning and students' metacognitive feelings in physical education. International Journal of Sport and Exercise Psychology, 15(2), 131-145.

Harrison, H., Griffin, S. J., Kuhn, I., & Usher-Smith, J. A. (2020). Software tools to support title and abstract screening for systematic reviews in healthcare: an evaluation. BMC medical research methodology, 20, 1-12.

Hatzigeorgiadis, A., & Galanis, E. (2017). Self-talk effectiveness and attention. Current opinion in psychology, 16, 138-142.

Hidayat, Y. (2019). Workshop of Self-talk Intervention for Beginners of Badminton Coaches. Asian Journal of Scientific Research, 12(2), 263–270.

Hidayat, Y., & Budiman, D. (2014). The influence of self-talk on learning achievement and self confidence. Asian Social Science, 10(5), 186.

Hidayat, Y., Yudiana, Y., Hambali, B., Sultoni, K., Ustun, U. D., & Singnoy, C. (2023). The effect of the combined self-talk and mental imagery program on the badminton motor skills and self-confidence of youth beginner student-athletes. BMC psychology, 11(1), 35.

Hills, A. P., Dengel, D. R., & Lubans, D. R. (2015). Supporting public health priorities: recommendations for physical education and physical activity promotion in schools. Progress in cardiovascular diseases, 57(4), 368-374.

Horcajo, J., Mateos, R., & Tannion, K. (2024). The interplay between self-talk and body posture on physical performance: Analyzing a moderated serial multiple mediation model. Psychology of Sport and Exercise, 70, 102534.

Huhtiniemi, M., Sääkslahti, A., Tolvanen, A., Watt, A., & Jaakkola, T. (2022). The relationships among motivational climate, perceived competence, physical performance, and affects during physical education fitness testing lessons. European Physical Education Review, 28(3), 594-612.

Jones, M. I., & Mattie, P. (2024). Self-talk, goal Setting, and visualization. In Handbook of mental performance (pp. 63-85). Routledge.

Kim, J., Kwon, J. H., Kim, J., Kim, E. J., Kim, H. E., Kyeong, S., & Kim, J. J. (2021). The effects of positive or negative self-talk on the alteration of brain functional connectivity by performing cognitive tasks. Scientific reports, 11(1), 14873.

Latinjak, A. T., Morin, A., Brinthaupt, T. M., Hardy, J., Hatzigeorgiadis, A., Kendall, P. C., ... & Winsler, A. (2023). Self-talk: An interdisciplinary review and transdisciplinary model. Review of General Psychology, 27(4), 355-386.

Liu, H. Y., Lu, F. J., Hsu, Y., Gill, D. L., Chiu, Y. H., & Peng, Y. H. (2022). Interactive effects on motor performance of mindfulness, performance under pressure, self-talk, and motor task characteristics. Perceptual and motor skills, 129(2), 307-327.

Marjanović, M., Comoutos, N., & Papaioannou, A. (2019). The relationships between perceived motivational climate, achievement goals and self-talk in physical education: Testing the mediating role of achievement goals and self-talk. Motivation and Emotion, 43, 592-609.

McEvilly, N., Verheul, M., & Atencio, M. (2015). Physical education at preschools: practitioners' and children's engagements with physical activity and health discourses. British Journal of Sociology of Education, 36(6), 832-852.

McGrane, B., Belton, S., Powell, D., Woods, C. B., & Issartel, J. (2016). Physical self-confidence levels of adolescents: Scale reliability and validity. Journal of Science and Medicine in Sport, 19(7), 563-567.

Methley, A. M., Campbell, S., Chew-Graham, C., McNally, R., & Cheraghi-Sohi, S. (2014). PICO, PICOS and SPIDER: a comparison study of specificity and sensitivity in three search tools for qualitative systematic reviews. BMC health services research, 14(1), 1-10.

Moen, K., & Middelthon, A. L. (2015). Qualitative research methods. In Research in medical and biological sciences (pp. 321-378). Academic Press.

Nasiri, S., & Shahbazi, M. (2018). The Effects of Attentional Strategies (Augmented feedback, Instructional Self-talk, and Instruction) on Motor Learning in Ten-Year-Old Children. International Journal of School Health, 5(3), 1-6.

Nedergaard, J., Christensen, M. S., & Wallentin, M. (2021). Valence, form, and content of self-talk predict sport type and level of performance. Consciousness and Cognition, 89, 103102.

Palomino, M., Dávila, A., & Melendez, K. (2019). Methodologies, methods, techniques and tools used on SLR elaboration: a mapping study. In Trends and Applications in Software Engineering: Proceedings of the 7th International Conference on Software Process Improvement (CIMPS 2018) 7 (pp. 14-30). Springer International Publishing.

Park, S. H., Lim, B. S., & Lim, S. T. (2020). The effects of self-talk on shooting athletes' motivation. Journal of Sports Science and Medicine, 19(3), 517–521.

Parker, M., MacPhail, A., O'Sullivan, M., Chróinín, D. N., & McEvoy, E. (2017). 'Drawing'conclusions. European Physical Education Review.

Pati, D., & Lorusso, L. N. (2018). How to write a systematic review of the literature. HERD: Health Environments Research & Design Journal, 11(1), 15-30.

Rethlefsen, M. L., Kirtley, S., Waffenschmidt, S., Ayala, A. P., Moher, D., Page, M. J., & Koffel, J. B. (2021). PRISMA-S: an extension to the PRISMA statement for reporting literature searches in systematic reviews. Systematic reviews, 10, 1-19.

Ryan, A. W., Kolås, L., Nilsen, A. G., & Almås, A. G. (2024). Systematic literature review as a digital collaborative research-like learning activity: a case study. Education and Information Technologies, 29(5), 5243-5257.

Sarkis-Onofre, R., Catalá-López, F., Aromataris, E., & Lockwood, C. (2021). How to properly use the PRISMA Statement. Systematic Reviews, 10, 1-3.

Sauer, P. C., & Seuring, S. (2023). How to conduct systematic literature reviews in management research: a guide in 6 steps and 14 decisions. Review of Managerial Science, 17(5), 1899-1933.

Shadinger, D., Katsion, J., Myllykangas, S., & Case, D. (2020). The impact of a positive, self-talk statement on public speaking anxiety. College Teaching, 68(1), 5-11.

Trabelsi, O., Gharbi, A., Souissi, M. A., Mezghanni, N., Bouchiba, M., & Mrayeh, M. (2022). Video modeling examples are effective tools for self-regulated learning in physical education: Students learn through repeated viewing, self-talk, and mental rehearsal. European Physical Education Review, 28(2), 341-360.

Van Raalte, J. L., Vincent, A., & Brewer, B. W. (2016). Self-talk: Review and sport-specific model. Psychology of Sport and Exercise, 22, 139-148.

Wallentin, M., & Nedergaard, J. S. (2023). Reframing self-talk in endurance sports using grammatical taxonomy. Cognitive Semiotics, 16(2), 91-119.

Wang, C., Shim, S. S., & Wolters, C. A. (2017). Achievement goals, motivational self-talk, and academic engagement among Chinese students. Asia Pacific education review, 18, 295-307.

Wang, F., Lee, E. K. O., Wu, T., Benson, H., Fricchione, G., Wang, W., & Yeung, A. S. (2014). The effects of tai chi on depression, anxiety, and psychological well-being: a systematic review and meta-analysis. International journal of behavioral medicine, 21, 605-617.

Webster, C. A. (2023). The comprehensive school physical activity program: An invited review. American Journal of lifestyle medicine, 17(6), 762-774.

Zarrett, N., Sorensen, C., & Cook, B. S. (2015). Physical and social-motivational contextual correlates of youth physical activity in underresourced afterschool programs. Health Education & Behavior, 42(4), 518-529.

Zourbanos, N., Papaioannou, A., Argyropoulou, E., & Hatzigeorgiadis, A. (2014). Achievement goals and self-talk in physical education: The moderating role of perceived competence. Motivation and Emotion, 38, 235-251.