

Exploring Influential Factors Shaping Students' Academic Self-Concept: A Systematic Literature Review

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Abstract

It has been reported that there is a positive correlation between academic self-concept, overall academic self-concept, and achieving high academic performance. However, several conflicting reports are valid in different domains of academic self-concept. Therefore, this systematic literature review explores the overarching factors influencing students' academic self-concept. The search results from three search engines, namely the Education Resources Information Center (ERIC), ResearchGate, and ScienceDirect, have identified 16 recent articles on the factors influencing students' academic self-concept. The synthesis of these articles identifies five main factors influencing students' academic self-concept, namely (1) student factors, (2) teacher factors, (3) school factors, (4) parental factors, and (5) social factors. A total of 18 sub-themes have been identified from these five main themes. Further research may explore the long-term effects of interventions to enhance self-concept, investigate cultural variations in self-concept development, and delve deeper into the interaction between emotions and academic self-concept. Limitations of the study and implications for research and practice are discussed.

Keywords: Self-Concept, School Students, Systematic Literature Review

Introduction

The Malaysia National Education Philosophy (FPK) aims to cultivate “the potential of individuals in a holistic and integrated manner, to produce individuals who are intellectually, spiritually, emotionally and physically balanced and harmonious”. The Malaysian National Education Policy (DPK) also emphasises the holistic development of students, not merely evaluating one aspect of the student's education. Hence, educators must equip students with the knowledge, skills, and attitudes necessary for the contemporary world, focusing on holistic education that emphasises critical skills and competencies. This fact underscores the importance of exploring all aspects of a student's development, not just their academic abilities from the perspective of teachers and parents but from their own beliefs of their

academic strengths and weaknesses. With this, educators and parents can empower the younger generation to progress by leveraging their self-concept to help them manoeuvre the dynamic and uncertain landscape of the current world.

Individuals' self-confidence plays a significant role in their psychological experiences and can be a primary determinant of their thoughts, emotions, and actions (Posavac & Posavac, 2020). Furthermore, Bandura (2011) and Tuominen et al. (2020) have emphasised the importance of students' perceptions of themselves, how they analyse academic achievements, and their expectations and beliefs. The self-concept and students' beliefs in their abilities can be stimulated or brought down in various ways within the school environment. Even the most minor conflict that may arise among peers, teachers, or school staff can positively and negatively impact students.

In general, self-concept is an individual's perception of themselves (Mojtaba Jahanifar, 2022; Brunner, 2010; Marsh, 1990). Self-concept encompasses self-assessments that influence students' cognitive functions and is a variable that facilitates desired academic achievements (De Melo & Amantes, 2021). In an attempt to integrate different definitions of self-concept, Shavelson, Hubner, and Stanton (1976) concluded that individuals' perceptions of themselves are formed through their experiences with their environment and are influenced by reinforcement from significant figures of that individual. On the other hand, Academic self-concept is defined as an individual's perception or assessment of their academic abilities (Marsh et al., 2018; Wimmer et al., 2018). In short, academic self-concept refers to students' self-confidence in their intellectual strengths and weaknesses (Shavelson et al., 1976). It is also described from a general perspective as a dynamic element necessary for students to achieve educational success. Previous studies on the factors influencing students' academic self-concept have yielded diverse results, and these results vary based on the specific domain of academic self-concept that is investigated (Shavelson et al., 1976; Verma, 2022). Previous studies have reported that academic self-concept correlates positively with self-efficacy, high self-esteem, and high academic achievement, thereby enhancing students' happiness (Verma, 2022). Students with a positive academic self-concept are motivated and determined to achieve their goals due to their high levels of confidence (Verma, 2022).

The schooling stage is a highly sensitive period in students' educational development (Kulkow, 2020). Students at an early age are expected to learn more effectively and efficiently than at other stages of their lives. This brings high expectations along with the pressures from teachers and parents who wish for them to succeed in a highly competitive world where lifelong learning has become a primary goal for a secure future. However, these demands have been associated with a decline in students' academic self-concept (Wigfield, Eccles, Mac Iver, Reuman, & Midgley, 1991). Therefore, to effectively support students in their academic education, this article lists the factors influencing students' academic self-concept. The article will present a literature review, methodology, findings, discussion, and conclusions.

Literature Review

In past and contemporary research, two widely researched branches of self-concept are the general and academic self-concept. While general self-concept is considered crucial for overall student well-being, a viewpoint asserts that academic self-concept holds significant

implications for intellectual development, career enhancement, and student well-being (Salchegger, 2016).

Based on a review by Shavelson et al. (1976) on the nature of hierarchy and dimensions of academic self-concept, researchers have reached a consensus that there are several specific domains of academic self-concept and that they show a high correlation between particular domains and the specific outcomes of each study (Marsh & Craven, 2006). For example, academic self-concept facilitates teacher support and student involvement in school (Galugu & Samsinar, 2019). Meanwhile, several research findings indicate that parenting styles can also influence the formation of students' academic self-concept (Dagneu, 2018; Franklin et al., 2017). Additionally, in a study by Verma (2022), male students reported higher academic self-concept in Mathematics than female students. However, the same study also found that academic self-concept in English did not significantly correlate with gender. Academic self-concept systematically predicts students' achievement in school (Pullmann & Allik, 2008). Chen et al. (2013) argue that students with a positive academic self-concept are more motivated and are likely to achieve higher grades. This finding is supported by Arens et al.'s (2011) study, which states that individuals with a high academic self-concept will acquire mediating factors leading to students' success in other educational aspects. However, most students experience failure in teaching and learning activities due to a lack of self-understanding regarding personal elements such as academic self-concept (Risaniatin Ningsih et al., 2022). Some students take risks during educational activities at school, such as providing uncertain answers in their examinations (Rüschenpöhler & Markic, 2019). These considerations underscore the importance of studying academic self-concept, which is closely related to students' educational issues.

These views are consistent with the viewpoint of Shavelson et al. (1976) that academic self-concept is subject to various academic domains and influenced by multiple factors within these domains. It cannot be denied that academic self-concept plays a crucial role in enhancing students' motivation and commitment to schoolwork. Therefore, this article presents the factors influencing students' academic self-concept. By gaining a deeper understanding of academic self-concept, the findings presented can empower parents, guidance and counselling teachers as well as educators to support and create an inclusive and conducive learning environment that fosters students' confidence, resilience, and enthusiasm for learning, ultimately enhancing their educational journey and future success.

Methodology

This systematic literature review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The PRISMA model provides researchers with a systematic approach to conducting evidence-based literature reviews. The validity of this systematic literature review depends on the implementation of the review process, study findings, and the clarity of the reporting. The review consists of four stages: Identification, Screening, Eligibility, and Inclusion. Article selection was based on predefined criteria to establish a systematic process for selecting high-quality articles for synthesis. One eligibility criterion for selecting articles for inclusion in this systematic literature review is that the articles must be written in English or Bahasa Melayu. Using these languages ensures that the researcher clearly understands the studies being reviewed. In addition, selected articles must have been published within the last five years, from January 2019 to 2023. There is no restriction on the country where the studies were conducted to gather various factors influencing students' academic self-concept.

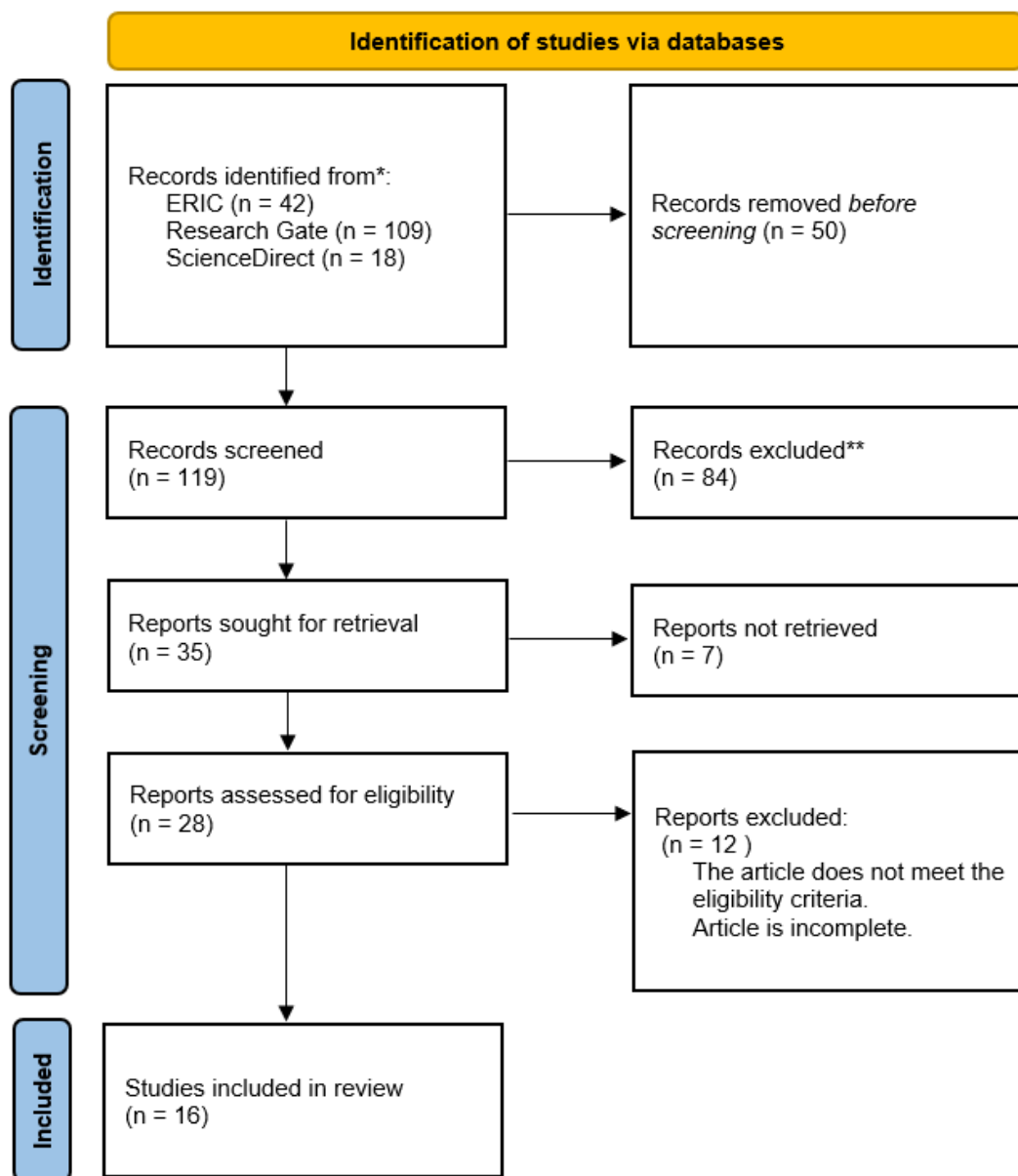


Figure 1: PRISMA flowchart illustrating the process of searching for relevant research articles (Source: PRISMA 2020 flowchart)

Identification

Three databases were used to search for articles related to students' academic self-concept. The databases are Education Resources Information Center (ERIC), ResearchGate, and Science Direct. These databases were chosen as they are high-indexed databases and accumulate a diverse range of peer-reviewed scholarly publications. Various keywords and search terms in English and Malay were employed in searching for journal articles in these databases. Examples of English keywords include "factor influencing" or "factor impacting" and "students' academic self-concept." Meanwhile, Malay keywords include "*faktor mempengaruhi*" and "*konsep sendiri murid*." The total search results across these databases amounted to 169 journal articles.

Screening

Several criteria for selecting the journal articles were identified before the search began. Firstly, the sought articles must have been published within the last five years, from January 2019 to 2023. The aim is to obtain the most recent studies and data on the factors influencing students' academic self-concept. Secondly, only empirical studies are used as they provide complete data, and their validity is proven through research. The selected articles only involve open-access articles to ease the acquisition process. Furthermore, the article search was focused on factors influencing students' academic self-concept exclusively at the school level. The preliminary review was conducted by examining the articles' titles, abstracts, and keywords. Subsequently, full articles were searched and saved based on eligibility criteria by screening the titles and abstracts of the articles to determine their suitability to be used in the stage of inclusion. Journal articles that did not meet the criteria, such as books or unpublished proceedings, were excluded. This stage continued with a literature screening where 50 journal articles were removed from the list due to database duplication and because they did not meet eligibility criteria based on titles, abstracts, keywords, and respondent criteria. The screening process was continued by further excluding 84 articles that did not meet eligibility criteria after the articles were read in their entirety.

Inclusion

Finally, in the inclusion stage, articles selected after the screening were identified and successfully labelled as samples for this systematic review. Out of 169 journal articles, only 35 were deemed suitable for screening. The articles were thoroughly read and filtered according to the established criteria. After all the articles were screened, 16 full articles that met the eligibility criteria were included in the synthesis. All 16 selected articles aim to identify the factors determining students' academic self-concept.

Findings

A summary of information analysed from the 16 articles is presented in Table 4, which pertains to the factors influencing student's academic self-concept. The summary is divided into six sections: title, author and publication year, country, number and gender of respondents, methodology, data collection methods, and study findings.

Table 1

Summary of Analysis on Title, Author and Publication Year, Country, Number of Respondents, Study Design, Data Collection, and Study Findings.

Title, Author, Country, Publication Year	Year	Respondent & Gender	Methodology	Data Collection Method	Study Findings
<i>Academic Self-Concept (ASC) and Well-Being of Students in Hong Kong: An Exploratory Study</i> Author:	2022	47 students M:18 F: 29	Research design: Cross-sectional study	Instrument: Survey through phone calls and emails.	The findings suggest that boys are more inclined to report higher levels of academic self-concept in Mathematics, while academic self-concept in English is unrelated to gender. The researcher concludes that gender does not influence academic self-concept. Student

Verma, R. Country: Hong Kong					enjoyment is associated with academic self-concept in English, but its relationship with academic self-concept in Mathematics still needs to be conclusive.
<i>Academic Self-Concept Change In Junior High School Students And Relationships With Academic Achievement</i> Author: Perinelli E., Pisanu F., Checchi D., Scalas L. F & Fraccaroli F. Country: Italy	2021	1674 students 10-13 years old M: - F: - 50.4%	Research design: Experimental	Instrument: Documentation	The findings suggest that both mathematics and verbal self-concept, on average, significantly decrease throughout lower secondary education, and there is substantial variability in how students change. The way students change in one academic self-concept is unrelated to changes in another.
<i>Academic Self-Concept, Teacher's Supports and Student's Engagement In The School.</i> Author: Nur Saqinah Galugu & Samsinar Country: Indonesia	2019	150 students 13-15 years old M: - F: -	Research design: Quantitative Correlation	Instrument: Survey using questionnaires	The findings suggest that academic self-concept as a mediating variable further strengthens the relationship between teacher support and student engagement in school. Teacher support, such as emotional support in learning, can positively enhance academic self-concept. Positive self-concept among students promotes the development of self-regulation and academic achievement, consequently increasing student engagement in the learning process.
<i>Analysis Of Longitudinal Relationship Among Elementary And Middle School Students' Multicultural Acceptance, Self-Concept, And Community Consciousness Using The Latent Growth Model</i>	2021	5460 students 11-14 years old M: 2635 F: 2833	Research design: Quantitative Longitudinal Descriptive statistics	Instrument: Survey using questionnaires	The findings suggest that the acceptance of cultural diversity among elementary and secondary school students influences the development of self-concept and community awareness. It can be predicted that changes in the acceptance of cultural diversity contribute positively to subsequent changes in self-concept.

<p>Author: Choi Eun-Jua & Lee Kyung-Hwab</p> <p>Country: Korea</p>					
<p><i>Effects Of Computer-Based Simulations Teaching Approach on Chemistry Self-Concept Among High School Students in Kenya</i></p> <p>Author: Jane, M. W & W. Florence, K. W.</p> <p>Country: Kenya</p>	2022	<p>175 students 14 years old</p> <p>M: - F: -</p>	<p>Research design: Quasi-experimental</p>	<p>Instrument: Survey using questionnaires Observation</p>	<p>The findings suggest a statistically significant difference in students' self-concept in Chemistry between those taught through Computer-Based Simulation (CBS) Teaching Approach and those following conventional teaching methods. There is no statistically significant difference in Chemistry self-concept between males and females taught through the CBS teaching approach.</p>
<p><i>Exploring Academic Self-Concepts Depending on Acculturation Profile. Investigation of a Possible Factor for Immigrant Students' School Success</i></p> <p>Author: Nanine Lilla, N., Thürer, S., Nieuwenboom, W. & and Schüpbach, M.</p> <p>Country: Germany</p>	2021	<p>15,239 students 15 years old</p> <p>M: 47.6% F: 47.3% Others: 5.1%</p>	<p>Research design: Quantitative Longitudinal</p>	<p>Instrument: Survey using questionnaires</p>	<p>The findings suggest that the aspect of academic self-concept among immigrant students is subject to their acculturation profile. Descriptive findings reveal grade differences for immigrant students with integrated, separated, and indifferent acculturation profiles, suggesting that compared to non-immigrant students, they receive less positive performance feedback. However, direct comparisons did not reveal any significant grade differences for immigrant students who had successfully assimilated.</p>
<p><i>Grade Retention Impact on Academic Self-concept: A Longitudinal Perspective</i></p> <p>Author: González-Nuevo, C. et al.</p>	2023	<p>5712 students ten years old</p> <p>M: - F: 49.6%</p>	<p>Research design: Quantitative Longitudinal</p>	<p>Instrument: Survey using questionnaires Cognitive test</p>	<p>The findings suggest that grade retention and grade transitions impact self-concept. A general trend of decreasing self-concept over time is observed. Overall, the samples show that the most stable group is the low self-concept group, as students classified in this group at the first time points generally</p>

<p>Country: Spain</p>					<p>remain in the same group at the second time points. Regarding transitions between groups, students are more likely to move out of the High self-concept group and transition into the Moderate self-concept group and from the Moderate self-concept group to transition into the Low self-concept group. Students retained in their previous grade tend to remain in their group or move to a lower self-concept group, while non-retained students tend to stay in or move to a higher self-concept group.</p>
<p><i>Impact Of Concept Based Activities (CBA) On Self- Concept Of Students In General Science At Elementary School Level</i></p> <p>Author: Noreen Ayaz, Muhammad Saeed Khan & Saddaf Ayub</p> <p>Country: Pakistan</p>	<p>2022</p>	<p>100 students from two different schools</p> <p>M: 50 F: 50</p>	<p>Research design: Experimental Factorial 2x2</p>	<p>Instrument: Survey using questionnaires Observation</p>	<p>The findings suggest that the performance of both males and female students in the experimental group (TTCBA) and the control group (NTTCBA) in the pre-test does not statistically differ for the scores measuring the development of self-concept using the PHCSCS-2 Scale. The performance of male and female participants in the experimental group (TTCBA) is better than that of the control group (NTTCBA).</p>
<p><i>Learning Motivation, Democratic Parenting, and Peer Relations Predict Academic Self-Concept</i></p> <p>Author: Risaniatin Ningsih, Nyoman Sudana Degeng, Triyono & M. Ramli</p> <p>Country: Indonesia</p>	<p>2022</p>	<p>962 students Year 8</p> <p>M: 40% F: 60%</p>	<p>Research design: Quantitative Correlation Regression</p>	<p>Instrument: Survey using questionnaires</p>	<p>The findings suggest that learning motivation has a positive and significant relationship with students' academic self-concept. Democratic parenting style also has a positive and meaningful relationship with students' academic self-concept. Peer relationships have a positive and significant relationship with students' academic self-concept due to the ability to interact with peers who share similarities. Therefore, learning motivation, democratic parenting style, and peer relationships collectively contribute 82.8% to students' academic self-concept.</p>

<p><i>Reciprocal relations between adolescents' self-concepts of ability and achievement emotions in mathematics and literacy</i></p> <p>Author: Clem A. L., Hirvonen R., Aunola K. & Kiuru N.</p> <p>Country: Finland</p>	<p>2021</p>	<p>848 students</p> <p>Year 6 12 years old</p> <p>M: 391 F: 457</p>	<p>Research design:</p> <p>Quantitative</p>	<p>Instrument:</p> <p>Survey using questionnaires</p>	<p>The findings suggest that the patterns of results differ for the subjects of mathematics and literacy. For mathematics, the results show a positive reciprocal relationship between self-concept of ability and enjoyment and a negative reciprocal relationship between self-concept and anxiety. A lower self-concept of ability in mathematics also predicts higher boredom in mathematics, but not vice versa. For literacy, the self-concept of ability does not predict any achievement emotion, and emotions do not predict literacy self-concept of ability. The results show that achievement emotions are both a source and consequence of adolescents' self-concept of ability, particularly in mathematics.</p>
<p><i>Students' Academic Self-Concept In Earth Science Through Online Process Oriented Guided Inquiry Learning Approach</i></p> <p>Author: Ricardo F. Uy Jr. & Azuelo A. G</p> <p>Country: Philippines</p>	<p>2023</p>	<p>50 students Year 9</p> <p>M: - F: -</p>	<p>Research design:</p> <p>Quantitative</p>	<p>Instrument:</p> <p>Survey using questionnaires</p>	<p>The findings suggest that students' academic self-concept is positive when exposed to the <i>Process Oriented Guided Inquiry Learning Approach (POGIL)</i>. Average positive results related to academic confidence and positive academic efforts were recorded when exposed to the online POGIL approach.</p>
<p><i>The generalized internal/external frame of reference model with academic self-concepts, interests, and anxieties in students from different language backgrounds</i></p> <p>Author:</p>	<p>2022</p>	<p>6275 students Year 9</p> <p>M: - F: 48%</p>	<p>Research design:</p> <p>Quantitative</p>	<p>Instrument:</p> <p>Data sets from Luxembourg's multilingual educational system</p>	<p>The findings suggest apparent contrast effects in the formation of self-concept and interest in mathematics, German, and French. It also reports a combination of contrasts, assimilation, and no effects in the formation of anxiety in mathematics, German, and French.</p>

<p>Van der Westhuizen, K, Arens, A. Samuel Greiff, S., Fischbach, A., Niepel, C.</p> <p>Country: Germany</p>					
<p>The Influence of Gifted and Talented Programs on Students' Self-concept</p> <p>Author: Ghina Kalaji & Nadera Alborna</p> <p>Country: United Arab Emirates</p>	2023	<p>10 students 14-18 years old</p> <p>M: 0 F: 10</p>	<p>Research design: Quantitative</p>	<p>Instrument: Survey using questionnaires Interview</p>	<p>The findings state that students exhibit positive self-concept in three dimensions: general, academic, and social. Two students show a relatively modest social self-concept but with high scores in their general and academic self-concepts. All three GT programs enhance their self-confidence and academic self-concept. Second, the findings suggest that social comparison has a negative effect on self-concept, while the reflected "glory effect" has a positive impact.</p>
<p><i>The relevance of school self-concept and creativity for CLIL outreach learning</i></p> <p>Author: Roth, T., Conradty, C. & Franz X. Bogner, F. X.</p> <p>Country: Germany</p>	2022	<p>252 Students Year 9 15 Years old</p> <p>M: 51.5% F: 48.5%</p>	<p>Research design: Descriptive</p>	<p>Instrument: Observation</p>	<p>The findings suggest that the assessment of the one-day CLIL genetic laboratory correlates with creativity and self-concept. However, participation yielded no gender differences except for the latent social variable in the self-concept scale.</p> <p>Self-concept correlates with short-term and long-term cognitive achievement and long-term linguistic knowledge, confirming a mutually reinforcing relationship between self-concept and academic achievement.</p> <p>Grades in Biology and English, with a negative correlation with self-concept, suggest that the modules effectively support those with lower achievements. The results indicate that interventions that enhance creativity can improve self-concept, leading to better performance in school.</p>

<p><i>White Lab Coats and Elementary Students' Science Self-Concept and Science Self-Efficacy</i></p> <p>Author: Jones M. G. et al</p> <p>Country: United States</p>	<p>2021</p>	<p>37 students 10-11 years old</p> <p>M: 19 F: 18</p>	<p>Research design:</p> <p>Descriptive</p>	<p>Instrument:</p> <p>Interview</p>	<p>The findings suggest that using a laboratory coat during science class makes students feel "good," "smart," and "like a scientist." This discovery is significant because the use of laboratory coats for these students (predominantly minority students from low-income backgrounds) impacts their perception of themselves as scientists. The data suggest that for some students, wearing a laboratory coat may be an effective strategy to enhance their self-concept in science.</p>
<p><i>Self-concept explains gender differences in mental rotation performance after stereotype activation</i></p> <p>Author: Rahel, M., Schürmann, L. & Jansen, P.</p> <p>Country: United States</p>	<p>2023</p>	<p>127 students 10 - 18 years old</p> <p>M: 61 F: 66</p>	<p>Research design:</p> <p>Quantitative</p>	<p>Instrument:</p> <p>Survey using questionnaires</p>	<p>The findings indicate that stereotype activation and self-concept influence the perception of achievement and actual achievement differently for male and female students. For male students, a better self-concept is associated with better performance in adolescents with stereotype activation and lower performance in those without activation. However, this interaction does not show significant differences for females. An increasing self-concept is associated with poorer performance in adolescents with stereotype activation and better performance in those without activation. A better self-concept is also linked to higher perceived achievement in male adolescents with stereotype activation and lower perceived achievement without activation.</p>
<p style="text-align: center;">Guide:</p> <p style="text-align: center;">M: Male F: Female</p>					

There are five main factors influencing academic self-concept: student factors, teacher factors, school factors, parent factors, and social factors, each with 18 sub-themes. The sub-themes under the student factor include gender, abilities such as creativity, and emotions, further divided into positive and negative emotions. Next, teacher support and teaching techniques are sub-themes under the teacher factor. School factors include academic

achievement, grade retention, and transitions. Parenting styles fall under the parent factor. Meanwhile, social factors encompass multicultural acceptance, student acculturation profiles, peer relationships, social comparison, and stereotype activation.

Author	Student Factors						Teacher Factors		School Factors		Parental Factors	Social Factors				
	G	CR	Emotions				TS	TLT	AA	GRT	PS	MA	AP	PR	SC	SA
			Positive		Negative											
			A	AC	HA	EJ										
R. Verma (2022)	/			/												
Perinelli E., Pisanu F., Checchi D., Scalas L. F & Fraccaroli F. (2021)										/						
Nur Saqinah Galugu & Samsinar (2019)							/									
Choi Eun-Jua & Lee Kyung- Hwab (2021)												/	/			
Jane, M. W, Kamonjo W. & Florence, K. W. (2022)	/						/									
Nanine Lilla, N., Thürer, S. , Nieuwenboom, W. & and Schüpbach, M. (2021)												/	/			
González-Nuevo, C. et al. (2023)									/							
Noreen Ayaz, Muhammad Saeed Khan & Saddaf Ayub (2022)							/									
Risaniatin Ningsih, Nyoman Sudana Degeng, Triyono & M. Ramli (2022)				/						/				/		
Clem A. L., Hirvonen R., Aunola K. & Kiuru N. (2021)					/	/	/	/								
Ricardo F. Uy Jr. & Azuelo A. G (2023)	/						/									
Van der Westhuizen, K, Arens, A. Samuel Greiff, S., Fischbach, A., Niepel, C. (2022)					/	/										
Ghina Kalaji& Nadera Alborno (2023)														/	/	
Roth, T., Conradt, C. & Franz X. Bogner, F. X. (2022)	/	/					/		/							
Jones M. G.et al (2021)				/												
Rahel, M., Schürmann, L. & Jansen, P. (2023)	/													/	/	

Note:

Student Factors	Teacher Factors	School Factors	Parent Factors	Social Factors
G = Gender CR = Creativity M = Motivation AC = Academic Confidence HA = Happiness EJ = Enjoyment AN = Anxiety BO = Bordon	TS = Teacher support TLT = Teaching and Learning Techniques	AA = Academic Achievement GRT = Grade retention or transition	PS = Parental Style	MA = Multicultural Acceptance AP = Acculturation profile PR = Peer relations SC = Social Comparison SA = Stereotype activation

Student Factors

The student factor includes gender, creativity, and emotions, with emotions further divided into positive emotions such as joy, happiness, academic confidence, and motivation, while negative emotions consist of anxiety and boredom. From the sub-factor of gender, four articles indicate that gender influences academic self-concept. Firstly, Verma (2022) explains that boys are more likely to report higher levels of academic self-concept in Mathematics, while no correlation was shown between gender and academic self-concept. The researcher concludes that gender does not influence academic self-concept in the English domain but shows a correlation between academic self-concept and Mathematics. Secondly, Jane and Flurence (2022) also report that statistically, there are no significant differences in chemistry academic self-concept between males and females taught through the Computer-based Simulation (CBS) teaching approach.

Conversely, Roth, Conradty, Franz, and Bogner (2022), using the Content and Language Integrated Learning (CLIL) approach, reports that participation did not produce gender differences except for the latent variable Social of the self-concept scale. Results by Rahel, Schürmann, and Jansen (2023) indicate differences in academic self-concept influencing actual performance and perceived performance in male and female students. For male students, a better academic self-concept is associated with better performance in students with stereotype activation.

In contrast, lower performance was reported for students in the non-stereotype activation group (Rahel, Schürmann & Jansen, 2023). However, the interactions do not show significant differences. For female students, an increasing self-concept was associated with poorer performance in the stereotype activation group and better performance in the non-activation group. A better self-concept was also linked to higher perceived performance in male adolescents with stereotype activation and lower perceived performance without stereotype activation (Rahel, Schürmann & Jansen, 2023).

Under the sub-factor of creativity, the same study by Roth, Conradty, Franz & Bogner (2022) indicates that creativity and academic self-concept in Biology and English measure expected constructs and are significantly correlated. The results suggest that interventions that enhance creativity can also improve self-concept in Biology and improve grades.

From the sub-factor of emotions, five articles related to positive emotions and four articles related to negative emotions that influence academic self-concept were analysed. Positive emotions were identified as motivation, academic confidence, enjoyment, and pleasure. Firstly, according to the study by Risaniatin Ningsih, Nyoman Sudana Degeng, Triyono, and Ramli (2022), motivation was reported to have a positive and significant relationship with students' academic self-concept. The study also said that students' academic motivation significantly impacts their academic self-concept more than parental education factors. Secondly, academic confidence correlates positively with academic self-concept. Uy & Azuelo (2023) students exhibit a positive academic self-concept as exposed to the online POGIL approach. In the online POGIL Earth Science class, students were optimistic about their academic ability, as shown by how they performed as a learning group, which resulted in satisfactory learning outcomes. Thirdly, the correlation between joy and academic self-concept was explained by Verma (2022). However, its relationship with academic self-concept in Mathematics is still inconclusive (Verma, 2022). Fourth, enjoyment and academic self-concept display different relationship patterns for mathematics and literacy subjects (Clem et al., 2021). Results indicated a positive and reciprocal correlation between self-concepts of

ability and enjoyment in mathematics and a negative reciprocal association between self-concept and anxiety in the same subject.

The other division under the sub-factor emotion is negative emotions. Two articles indicated that anxiety and boredom affect students' academic self-concept. Anxiety and academic self-concept show a negative reciprocal relationship in Mathematics (Clem et al., 2021). Additionally, lower academic self-concept predicts higher boredom in mathematics but not vice versa (Clem et al., 2021). Subsequently, a study on self-concept, interest, and imbalance by Van der Westhuizen, Arens, Greiff, Fischbach, and Niepel (2022) demonstrates clear differences in self-concept formation and interest in Mathematics, German, and French. It also reports a combination of contrasts, assimilation, and no reported effects in the formation of anxiety in Mathematics, German, and French.

Teacher Factors

The factor of learning comprises teacher support and the teaching and learning techniques employed in schools. One article in the analysis indicated that teacher support influences students' academic self-concept. The study by Nur Saqinah and Samsinar (2019) reports a correlation between teacher support and student engagement in school, strengthening the presence of academic self-concept as a mediating variable. Teacher support, such as emotional support during the learning process, can positively impact students' academic self-concept. A positive self-concept, in turn, encourages the development of self-regulation and academic achievement, ultimately enhancing student engagement in the learning process (Nur Saqinah Galugu and Samsinar, 2019).

Within the sub-factor of teaching and learning techniques, four articles indicate that teaching and learning techniques influence students' academic self-concept. First, a study by Jane and Florence (2022) statistically shows significant differences in Chemistry self-concept among students when teachers use a Computer-Based Simulation (CBS) teaching approach compared to students using conventional teaching methods. Secondly, research by Noreen Ayaz, Muhammad Saeed Khan, and Saddaf Ayub (2022) on the effects of Concept-Based Activity (CBA) on students' self-concept in general science proves that the experimental group's performance taught using the CBA approach is better than the control group. Thirdly, a study by Uy Jr. and Azuelo (2023) reports that students' academic self-concept is positive when exposed to the Online Process-Oriented Guided Inquiry Learning (POGIL) approach. In the POGIL class, students feel positive about their academic abilities, leading to satisfactory learning outcomes (Uy Jr. & Azuelo, 2023). Lastly, the study on the use of laboratories and its impact on students' self-concept conducted by Jones et al. (2021) reveals that the use of laboratories during science classes makes students feel "good," "smart," and "like a scientist." This finding is highly significant as the utilisation of laboratories for students, mostly from minority backgrounds with lower incomes, affects their perception of themselves as scientists. This report enhances positive emotions in students. Thus, for some students, using laboratories could be an effective strategy to enhance science self-concept (Jones et al., 2021). Therefore, it can be summarized that the techniques and types of teaching and learning approaches positively impact students' academic self-concept.

School Factors

The school factor encompasses sub-factors of grade retention or transition and academic achievement. Firstly, concerning grade retention or transition, an article by González-Nuevo et al. (2023) indicates that grade retention or transition affects academic self-concept. At

times, weaker students may be retained in their previous grades to provide a second opportunity to achieve the required grade level to continue their studies. A general downward trend in self-concept from time to time was recorded, and it was found that the group of students with low self-concepts was the most stable because they generally remained in the same group when transitioning to the second time point in the study. In terms of transitions between groups, students are more likely to move from high self-concept groups to moderate self-concept groups.

Conversely, students from moderate self-concept groups move to low self-concept groups. Students retained in their previous grades tend to stay in their original self-concept group or move to a lower self-concept group. In comparison, students who do not change grades tend to remain in their original self-concept group or move to a higher self-concept group (González-Nuevo et al., 2023). Hence, grade retention or transition positively and negatively impacts students' self-concept.

Subsequently, the sub-factor of academic achievement was present in two articles, indicating that academic achievement influences academic self-concept. While most studies investigate the influence of self-concept on academic achievement, the study by Roth, Conradt, Franz & Bogner (2022) explored the characteristics of the interchangeability of mathematics self-concept across lower secondary schools and examined its relationship with academic achievement. Their findings indicate that self-concept correlates with short-term and long-term cognitive achievement and long-term linguistic knowledge, confirming a mutually reinforcing relationship between self-concept and academic achievement (Roth et al., 2022). Additionally, the study by Perinelli et al. (2021) reported that both mathematics and oral self-concepts, on average, significantly decline throughout lower secondary schooling, with substantial variability in how students change. Thus, it is concluded that how students change in one academic self-concept is unrelated to changes in other academic self-concepts.

Parental Factors

One sub-theme under the parental factor that influences students' academic self-concept is parental parenting style, specifically democratic parenting. One article addressing this sub-factor is the study by Risaniatin Ningsih et al. (2022), which asserts that democratic parenting style has a positive and significant relationship with students' academic self-concept. This is attributed to the role of parents in balancing control and warmth to shape a disciplined, independent, and responsible personality in their children (Risaniatin Ningsih et al., 2022). Consequently, positive parenting is closely related to self-concept and the effectiveness of the school's role among lower secondary students. This study's findings demonstrate that children's high and low learning outcomes are implications of parenting models. Children raised through democratic parenting exhibit high learning outcomes, while those raised through authoritative parenting show lower learning outcomes (Risaniatin Ningsih et al., 2022).

Social Factors

The social factor encompasses sub-factors of multicultural acceptance, acculturation profile, peer relationships, social comparison, and stereotype activation.

Regarding acceptance of cultural diversity and acculturation profile, two articles indicate that these sub-factors influence academic self-concept. For immigrant students or those studying in culturally diverse environments, it was found that cultural acceptance and acculturation profiles play a crucial role in developing their academic self-concept. Choi Eun-Jua and Lee

Kyung-Hwab (2021) report that multicultural acceptance by elementary and middle school students influences the development of self-concept and community awareness. Changes in accepting cultural diversity contribute positively to subsequent changes in self-concept and community awareness. Subsequently, a study conducted by Lilla et al. (2021) provides initial evidence that the academic self-concept of immigrant students is also subject to their acculturation profiles. Lilla et al. (2021) state that immigrant students with various acculturation profiles show less positive achievement than non-immigrant students. However, comparisons did not reveal significant grade differences for assimilated immigrant students.

Regarding the sub-factor of peer relationships, one article by Risaniatin Ningsih et al. (2022) reports that peer relationships have a positive and meaningful relationship with academic self-concept due to students' ability to interact with peers who share similarities. This is because social relationships enable students to build friendships, receive physical and emotional support, enhance self-esteem, adapt to social contexts, and experience intimacy. In conjunction, social comparison and stereotype activation were present in two articles that demonstrate that both sub-factors influence academic self-concept. The study by Kalaji and Alborno (2023), exploring the academic self-concept levels of students participating in three Gifted and Talented (GT) programs, reports that students exhibit positive self-concepts within three dimensions: general, academic, and social. The results of their study reported that two students show relatively modest social self-concepts but with high scores in general and academic self-concepts. Nevertheless, all three GT programs enhance their self-confidence and academic performance. The findings also suggest that social comparison has a negative impact on self-concept. In contrast, the "glory effect", or a sense of pride reflected in students, positively affects academic self-concept. This is similar to Rahel, Schürmann, and Jansen's (2023) findings report that stereotype activation and self-concept influence academic achievement with differences in perceptions between male and female students. The report indicates small differences between male students with higher self-concept and academic performance with stereotype activation and male students with lower achievement for those without stereotype activation. Conversely, Rahel, Schürmann, and Jansen (2023) state that for female students, stereotype activation leads to increased self-concept associated with negative achievement and positive achievement for those not activated. Furthermore, a better self-concept is associated with high achievement perceptions in male adolescents with stereotype activation and lower achievement perceptions without such activation (Rahel, Schürmann & Jansen, 2023).

Discussion

The six factors influencing students' self-concept, namely student, teacher, school, parental, and social factors, have been presented in this systematic literature review. Eighteen sub-themes presented under these factors include gender, creativity, motivation, academic confidence, enjoyment, happiness, anxiety, boredom, teacher support, teaching and learning techniques, academic achievement, grade retention or transition, parenting styles, cultural diversity acceptance and acculturation profile, peer relationships, as well as social comparison and stereotype activation.

Verma (2022) suggests that gender can influence academic self-concept. However, the influence of gender varies across different subject domains (Verma, 2022; Jane & Kamonjo, 2022). For instance, male students report higher academic self-concept in Mathematics than female students (Verma, 2022). Conversely, no significant gender differences were recorded

for academic self-concept in English (Verma, 2022) and Chemistry (Jane & Kamonjo, 2022; Yusuf, 2010). This underscores the importance of considering the subject-specific influence on academic self-concept when designing interventions, models, and other systems to support students' learning.

Students with high academic self-concept tend to achieve good academic performance, and conversely, good academic performance can contribute to a high academic self-concept (Roth et al., 2022). This aligns with the perspective of Arens et al. (2016), stating that the reciprocal nature of academic achievement and self-concept can also contribute to a more positive development of both self-concept and academic achievement. However, Moller et al. (2020) emphasise that the relationship between academic self-concept and academic achievement depends on the domains with which academic self-concept is studied. This is supported by Perinelli et al. (2021), who show a significant decrease in mathematics and oral self-concept during high school, with variations in how students' self-concept changes over time. This underscores the importance of cultivating a positive academic self-concept by considering the studied domains and the potential changes to the students' self-concept over time.

Academic self-concept has implications for educational practices and student success. Teacher support and the implementation of effective teaching and learning strategies can enhance academic self-concept and academic achievement. Cherng (2017) argues that the teacher's role in the classroom and the utilisation of effective teaching strategies are key to fostering a positive academic self-concept. Roth, Conradty, Franz, and Bogner (2022) also suggest that creativity and positive emotions contribute to academic self-concept. In line with the study by Jones et al. (2021), exploring the effects of laboratory use in science classrooms on students' academic self-concept, some students have a positive self-perception when using laboratories during learning. These findings emphasise the importance of creative teaching methods to cultivate positive emotions in the classroom to enhance student's academic self-concept. Thus, teachers can implement teaching strategies such as using creative and stimulating learning approaches.

The relationship with primary caregivers during the early years of life is crucial for forming a clear academic self-concept (Kural & Kovács, 2022). The study by Risaniatin Ningsih et al. (2022) summarises the role of parenting styles in shaping students' academic self-concept. The democratic parenting style that balances control and warmth has a positive and significant relationship with students' academic self-concept. The self-concept built from the family environment provides a strong foundation for shaping a child's mind to understand their academic potential and take appropriate developmental steps (Risaniatin Ningsih et al. 2022). This perspective aligns with the views on parenting concepts by Dagnev (2018), stating that how parents interact, assess, and value their children will significantly impact their academic self-concept. This provides insight for parents into the importance of democratic education for their children (Utomo et al., 2021).

Sementara itu, Eun-Jua and Kyung-Hwa (2021) suggest that accepting cultural diversity in schools influences students' academic self-concept. This finding aligns with the results of the study conducted by Sul, Lee, and Kim (2019), confirming that awareness of cultural diversity significantly impacts adolescents' self-concept. Furthermore, Lilla, Thürer, Nieuwenboom, and Schüpbach (2021) state that the academic self-concept of immigrant students and those from diverse cultural backgrounds can be affected by cultural acceptance and acculturation profiles. Positive acceptance of cultural diversity in schools and communities contributes to the improvement of students' academic self-concept. Therefore, fostering cultural

acceptance and recognising the diversity of students' cultural backgrounds can enhance academic self-concept among foreign and culturally diverse students.

Next, Risaniatin Ningsih et al. (2022) suggest that positive peer relationships significantly influence academic self-concept. Interacting with peers who share similarities fosters a sense of belonging and enhances academic self-concept (Risaniatin Ningsih et al., 2022). However, the study by Rahel, Schürmann, and Jansen (2023) explores the effects of social comparison and stereotype activation on students' self-concept. They indicate that social comparison and stereotype activation can impact academic self-concept and achievement (Rahel, Schürmann & Jansen, 2023). This can also be in connection to Festinger's (1954) social comparison theory, emphasising the role of the social environment in shaping an individual's self-concept. The theory revolves around the idea that one possesses a drive to obtain an accurate self-assessment through objective means. In the absence of objective criteria, individuals evaluate their abilities and opinions by comparing themselves to others. This comparison is typically made with individuals of similar status, as people tend not to compare themselves with those perceived as different in abilities.

In the study conducted by Kalaji and Alborn (2023) regarding students engaged in the "Gifted and Talented" program, when students realise that the program is selective and based on the high academic abilities of students, their self-concept tends to improve (Cunningham & Rinn, 2007). This aligns with findings from Preckel et al.'s research (2019). However, these results do not support the widely cited Big-Fish-Little-Pond (BFLP) effect, which suggests that if students are placed in an environment with peers of similar or higher abilities, their self-concept will decrease (Kalaji & Alborn, 2023). Therefore, parents and educators need to be aware of the social standing of students and their social perceptions and peer relationships to avoid triggering stereotypes or creating social comparisons both in the classroom and at home.

Although this review has collected various factors influencing academic self-concept, a gap exists in which more research should be carried out. The complexity of these factors has been discussed, but constructing a comprehensive theoretical framework that explains the relationships between factors, domains and students' academic self-concept has yet to be quickly concluded. There are also limitations in the studies that need to be highlighted, such as the exclusivity of literature written in both English and Malay languages and the use of only three high-indexed databases. There is a possibility that additional factors emerge from articles published in other languages and on search engines that do not overlap with those used in this review. Furthermore, suggestions for further research include integrating these findings into a more comprehensive theoretical model, contributing to a deeper understanding of the diverse nature of students' academic self-concept. Further investigation can also explore the long-term effects of interventions teachers use to enhance students' academic self-concept in different domains, investigate cultural variations in the development of academic self-concept, and conduct further research on the interaction between the various negative and positive emotions and academic self-concept.

Conclusion

In this systematic literature review, five factors influencing students' self-concept have been examined: student, teacher, school, parent, and social factors. The first sub-factor, which is the student factors, encompasses gender, creativity, and emotions, with emotions divided into positive and negative emotions. Positive emotions include motivation, academic confidence, enjoyment, and happiness, while negative emotions are categorized into anxiety

and boredom. Secondly, teacher-related factors consist of teacher support and teaching and learning techniques. Thirdly, school-related factors include grade retention or transition and students' academic achievement. Furthermore, the democratic parenting style falls under parent-related factors. Finally, social factors comprise acceptance of cultural diversity and acculturation profiles, peer relationships, and social comparison and stereotype activation. The themes identified through this systematic literature review can serve as a reference point for future researchers interested in studying students' self-concept across various domains. These factors also play a crucial role in influencing stakeholders, especially in schools and educational institutions. By enhancing our understanding of these factors, stakeholders can improve education practices and tailor them to students' needs, abilities, and interests.

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