

# Systematic Literature Review: The Role of Academic Buoyancy on Academic Achievement in High School Students and Its Implications for Guidance and Counseling

Muhammad Nur Habibi<sup>1\*</sup>, Ahman<sup>2</sup>, Yaya Sunarya<sup>3</sup>, Ferianti<sup>4</sup> 

<sup>1,2,3,4</sup> Fakultas Ilmu Pendidikan, Universitas Pendidikan Indonesia, Bandung, Indonesia

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## ABSTRAK

Saat ini diperlukan kajian terbaru yang bisa memberikan manfaat terkait peningkatan mutu pendidikan. Sebagai upaya peningkatan mutu pendidikan di sekolah menengah atas, timbul minat untuk mengkaji peran academic buoyancy dalam salah satu tujuan dasar yang ingin dicapai siswa sekolah, yaitu prestasi akademik. Academic buoyancy adalah kemampuan untuk tetap bertahan dan berhasil menghadapi kesulitan akademik sehari-hari di sekolah sehingga diharapkan dapat berpengaruh terhadap peningkatan prestasi akademis. Penelitian ini bertujuan untuk menganalisis peran academic buoyancy terhadap prestasi akademis siswa SMA, serta menjelaskan implikasi hasil penelitian ini terhadap bimbingan dan konseling. Penelitian ini menggunakan metode systematic literature review. Pengumpulan data dilakukan dengan metode pernyataan PRISMA (Protocol Review Systematic and Meta-Analysis), dengan bantuan aplikasi Harzing's Publish or Perish pada basis data Scopus. Hasil penelitian menunjukkan bahwa academic buoyancy mempunyai pengaruh positif terhadap prestasi akademik, baik secara langsung, sebagai mediator variabel lain, maupun sebagai pengaruh tidak langsung terhadap academic achievement. Implikasi hasil penelitian terhadap bimbingan dan konseling didiskusikan lebih lanjut pada bagian pembahasan.

## ABSTRACT

Currently, a new study is needed that can provide benefits related to improving the quality of education. As an effort to improve the quality of education in high schools, there is an interest in studying the role of academic buoyancy in one of the basic goals that school students want to achieve, namely academic achievement. Academic buoyancy is the ability to survive and succeed in facing daily academic difficulties at school so that it is expected to have an effect on improving academic achievement. This study aims to analyze the role of academic buoyancy on the academic achievement of high school students, and to explain the implications of the results of this study for guidance and counseling. This study uses a systematic literature review method. Data collection was carried out using the PRISMA (Protocol Review Systematic and Meta-Analysis) statement method, with the help of the Harzing's Publish or Perish application on the Scopus database. The results of the study indicate that academic buoyancy has a positive effect on academic achievement, both directly, as a mediator of other variables, and as an indirect effect on academic achievement. The implications of the results of the study for guidance and counseling are discussed further in the discussion section.

## 1. INTRODUCTION

Academic buoyancy refers to an individual's ability to remain resilient and adaptable in the face of everyday academic challenges encountered in school. This concept, first introduced as a construct by Martin and Marsh, emphasizes the capacity of students to "stay afloat" despite the various difficulties inherent in academic life. These challenges include the pressures of academic assignments, the stress associated with performance expectations, and the inevitable fluctuations in academic outcomes. Such obstacles are common realities within educational institutions, requiring students to develop coping mechanisms that ensure they remain focused and engaged in their learning processes (A J Martin & Marsh, 2006; Andrew J. Martin & Marsh, 2009). The need for academic buoyancy becomes evident when

\*Corresponding author

E-mail addresses: [mnurhabibi@upi.edu](mailto:mnurhabibi@upi.edu) (Muhammad Nur Habibi)

considering the potential impacts of academic difficulties. For instance, the deterioration of school performance, coupled with the demands of meeting tight deadlines for assignments, can lead to stress and anxiety among students. Academic buoyancy equips students with the resilience needed to navigate these stressors effectively. Rather than succumbing to the pressures of academic life, students with strong academic buoyancy demonstrate the ability to persevere, adapt, and maintain a positive outlook, even in challenging situations.

Moreover, academic buoyancy is not limited to overcoming major adversities. Instead, it focuses on managing the smaller, day-to-day difficulties that are integral to the academic experience. These include dealing with negative feedback, tackling challenging assignments, and maintaining consistent effort despite setbacks. According to Martin and his colleagues, academic buoyancy represents a student's capacity to handle these recurring pressures with a sense of determination and purpose. This ability ensures that students remain motivated and continue to work towards their goals, even in the face of routine academic stressors (Andrew J. Martin, 2014; Andrew J. Martin, Ginns, Papworth, et al., 2013; Miller et al., 2013). In essence, academic buoyancy acts as a protective factor for students, enabling them to navigate the rigors of academic life with confidence. It fosters resilience and adaptability, empowering students to rise above the challenges they encounter on a daily basis. By cultivating academic buoyancy, schools can better support students in achieving not only academic success but also personal growth and well-being.

Academic buoyancy tries to focus on samples with a 'healthy' context and greater quantity, so buoyancy is called a positive version of resilience in the discipline of psychology (Andrew J. Martin & Marsh, 2019; Zhang, 2021). The involvement of positive psychology in the world of education and schools is not only limited to how to provide learning and teaching activities for teachers and students but focuses on how to explore learning activities to make them fun and more meaningful (Xu & Wang, 2022). Thus, academic buoyancy has great benefits for students' education at school. As part of efforts to improve the quality of education in high schools, there has been growing interest in exploring the concept of academic buoyancy and its potential role in achieving one of the fundamental objectives for students: academic achievement. Academic buoyancy, defined as the ability to successfully navigate everyday academic challenges and setbacks, has emerged as a critical factor in understanding how students thrive in their educational journey. This exploration is significant, as it offers valuable insights that can inform the work of school counselors and the development of effective guidance and counseling programs within high schools. The implications of academic buoyancy research for high schools are far-reaching (Mutiarra et al., 2023; Sartika & Krisnanda, 2020). By identifying how students respond to challenges and maintain motivation, schools can tailor their support systems to foster resilience and improve academic outcomes. For school counselors, understanding the nuances of academic buoyancy can enhance their ability to address students' individual needs and create environments that promote persistence and engagement in learning.

Since the concept of academic buoyancy was first introduced in 2008, it has been the subject of extensive study across various educational contexts, including high schools. Researchers have investigated its role in helping students manage common academic adversities, such as low grades, peer competition, and exam stress. These studies have provided a deeper understanding of how academic buoyancy functions as a protective factor that enables students to maintain performance and psychological well-being (Colmar et al., 2019; Lei et al., 2021). In the high school domain specifically, numerous studies have explored the practical applications of academic buoyancy. For instance, research involving high school student respondents has shed light on how their ability to stay buoyant correlates with better academic performance and emotional health. Such findings underscore the importance of integrating academic buoyancy into the curriculum and counseling strategies, ensuring that students are equipped to handle academic pressures effectively. By continuing to examine academic buoyancy in high school settings, educators and researchers can work together to refine methods that enhance students' resilience. The insights gained from these efforts not only contribute to academic success but also prepare students for lifelong challenges beyond the classroom.

These studies provide empirical evidence of the existence of academic buoyancy exploration carried out in the education domain in high schools (Collie et al., 2015, 2017; Andrew J. Martin, 2014; Symes et al., 2015). Some studies specifically explore the effect of academic buoyancy on academic achievement, where these studies show a positive effect of this construct on student academic achievement on primary school students (Miller et al., 2013; Putwain et al., 2022; Putwain & Wood, 2023), research on university students (Putwain et al., 2020; Weißenfels et al., 2022), on secondary school students (Jahedizadeh et al., 2021). To find out the role of academic buoyancy in students' academic achievement in high school in the research that has been conducted, one exploration method that can be carried out is a systematic literature review. The novelty of this study provide a systematic literature

review of academic buoyancy in high school students is needed to produce references that have implications for school counselors or teaching staff to implement this construct as a proactive effort in realizing academic achievement for high school students. In addition, the results of this exploration can also be a reference for school counselors to provide various interventions targeted at empowering the construct of academic buoyancy for high school students. High school students were chosen as the sample in this literature review because it follows the trend of previous research samples used by Martin & Marsh and several other researchers. Therefore, this research aims to explore what role academic buoyancy plays in academic achievement, by reviewing research that has been conducted related to academic buoyancy in high school students, then identifying the implications of the results of this research for guidance and counseling.

## 2. METHOD

This study's systematic literature review procedure was designed according to the Protocol Systematic Review and Meta-Analysis (PRISMA) statement. PRISMA statements are useful for improving the quality of review procedures and reporting of study results to make them more systematic (Liberati et al., 2009; Moher et al., 2009). The literature search was in the form of articles published in the last decade, between January 2013 and May 2023. Articles targeted for review were obtained through the help of the Harzing Publish or Perish search engine application with the Scopus search domain so that the search results will come from Scopus-indexed journals. Scopus was involved as a database source because of its large number of publications and extensive number of citations. In addition, Scopus is also the most comprehensive database so it will avoid inconsistencies that usually arise from using various more general databases (Aghaei Chadegani et al., 2013; Zhu & Liu, 2020). The words used in the search engine are 'Academic buoyancy' in the Title words column and the word 'Achievement' in the Keyword column so that the resulting article contains the word academic buoyancy in the title and the word achievement in the article's contents. This study does not use filters or filters based on author, type of journal, country, gender, age, or editor because not all filters are available in all databases.

Articles obtained from the previous search process were re-selected involving the inclusion and exclusion stages. Articles that are included indicate that the article will be included in the review, similarly with articles excluded indicating that the article is not included in the research review. The criteria set for the included articles are: (1) articles must have been published in Scopus-indexed journals; (2) through checking the abstract, the article specifically determines high school as the research sample or as one of the research samples; (3) the research results show that academic buoyancy is related to academic achievement. Furthermore, the criteria for articles filtered at the exclusion stage so they were not included in the research review were: (1) articles with primary school and student research samples; (2) non-article literature, including theses, dissertations, theses, or books. The first search identified 25 articles that potentially met the inclusion and exclusion criteria. No duplicate articles were found in the 25 articles. They were then filtering the feasibility of inclusion and exclusion through abstract examination. Based on the screening, there were seven articles that met the criteria examined in the article abstract. PRISMA statement flowchart of the research procedure is show in [Figure 1](#).

Quality assessment was carried out on the four articles included in this study. The method used to assess the articles' quality is adapted from the framework developed by Surr et al. (2017) and rated each item from 0 to 2. In particular, a score of 2 is given if the criteria are fully met, one if it is partially met, and 0 if the criteria are not met or missing. Articles are assigned a high overall quality rating if the score is 11–14, moderate if the score is 6–10, and low if the score is  $\leq 5$ . Articles with a high overall ranking must meet all the criteria. Articles of moderate quality should meet most criteria or at least a sufficient level. Articles that rank low meet only a few quality criteria. Therefore, even if they are potentially interesting or relevant, those article results should be treated with caution. The criteria for assessing the quality of the articles are detailed in [Table 1](#).

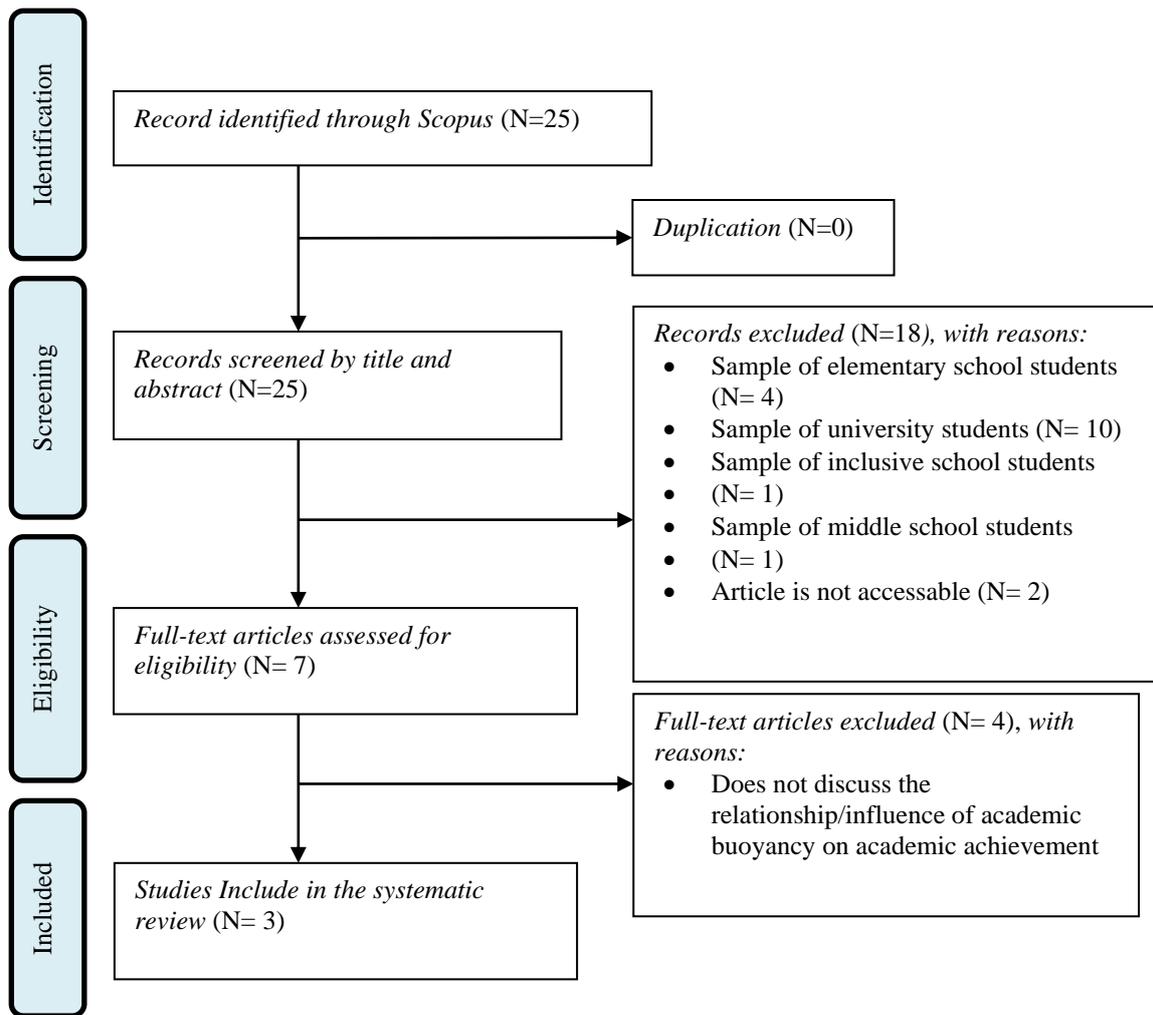


Figure 1. PRISMA Statement Flowchart of the Research Procedure

Table 1. Article Quality Assessment Criteria

Quality Criteria	Specific questions for rating consideration	Rating
1. Are the research questions and the objectives of the research clearly stated in article?	<ul style="list-style-type: none"> <li>Is the research plan clearly stated by the researcher?</li> </ul>	0= no 1= partial 2= yes
2. Are articles involving ethical issues?	<ul style="list-style-type: none"> <li>Is the ethical approval that must be sought stated by the author?</li> <li>Is awareness of the ethical issues raised in the research demonstrated by the author? (e.g., confidentiality, informed consent, etc.).</li> </ul>	0= no 1= partial 2= yes
3. Is the research design/methodology derived from the research questions?	<ul style="list-style-type: none"> <li>Do the authors explicitly state their chosen research methodology? Is the research methodology stated explicitly by the researcher?</li> <li>Is the methodology used based on the research question?</li> <li>For qualitative research, Is the methodology chosen in qualitative research appropriate to the research objectives?</li> </ul>	0= no 1= partial 2= yes
4. Is the description, selection, and size	<ul style="list-style-type: none"> <li>Is the method of identifying the sample size clearly stated by the author?</li> </ul>	0= no 1= partial

Quality Criteria	Specific questions for rating consideration	Rating
appropriate?	<ul style="list-style-type: none"> <li>Is the large of sample appear proportionate?</li> <li>Is the sample described adequately by the author? (e.g., age, gender, social culture, etc.).</li> <li>Is the sampling context explained by the author?</li> <li>Are the recruitment methods used described by the authors?</li> <li>were inclusion criteria identified by the authors?</li> </ul>	2= yes
5. Is the data collection method used firm?	<ul style="list-style-type: none"> <li>Is the proposed method free from bias and appropriate to the participants?</li> <li>Are the reasons why a particular data collection approach was used explained by the author?</li> </ul>	0= no 1= partial 2= yes
6. Was data analysis carried out using firm methods?	<ul style="list-style-type: none"> <li>Did the authors state what approach they used for data analysis?</li> <li>Is this approach linear with the data obtained?</li> <li>Is the approach implemented systematically?</li> <li>was the validity of the findings detailed by the author?</li> </ul>	0= no 1= partial 2= yes
7. Are the discussions and findings stated explicitly?	<ul style="list-style-type: none"> <li>Are the problems arising from the data clearly identified by the author?</li> <li>Is there data that can support the problems found presented by the author?</li> <li>Are the main findings summarized by the author?</li> <li>Are the findings linked to the research objectives?</li> <li>Are the findings linked to current psychological literature by the author?</li> <li>Are the limitations of the study clearly identified by the researcher?</li> <li>Are the strengths of the study firmly identified by the author?</li> <li>Are the conclusions made by the author supported by a discussion of his findings?</li> </ul>	0= no 1= partial 2= yes
<b>Total</b>		<b>Range: 0-14</b>

### 3. RESULTS AND DISCUSSION

#### Result

##### *Output of Extraction Data*

After complete text screening, three kinds of literature were excluded because they did not meet the subsequent inclusion criteria. In the end, this study included three articles for review, as seen in [Table 2](#).

**Table 2.** Articles included in the Literature Review

Author - Year of Research	Research Title	Journal Name - Journal Index	Research Results
(Collie et al., 2015)	“Academic buoyancy, student's achievement, and the linking role of control: A cross-lagged analysis of high school students”	British Journal of Educational Psychology – Q1	Buoyancy and achievement are related to control over time, but not to each other (Phase 1). In addition, control appears to play a role in how buoyancy affects achievement and that cyclical processes can operate between the three factors over time (Phase 2).
(Collie et al., 2017)	“Academic buoyancy mediates academic anxiety's effects on	Educational Psychology – Q1	There is an effect of academic buoyancy mediation on four learning

Author - Year of Research	Research Title	Journal Name - Journal Index	Research Results
	learning strategies: an investigation of English- and Chinese-speaking Australian students"		strategies.
(Datu & Yang, 2021)	"Academic buoyancy, academic motivation, and academic achievement among filipino high school students"	Current Psychology – Q2	Academic buoyancy is associated with higher levels of academic achievement as well as a controlled and autonomous motivational orientation.

As required in the article quality assessment criteria, all articles are of high quality, and none are of low or medium quality. All articles include scores of 11-12 as show in see [Table 3](#).

**Table 3. Total Quality Scores on the Four Articles**

Articles	Total quality score
(Collie et al., 2015) "Academic buoyancy, student's achievement, and the linking role of control: A cross-lagged analysis of high school students"	12
(Collie et al., 2017) "Academic buoyancy mediates academic anxiety's effects on learning strategies: an investigation of English- and Chinese-speaking Australian students"	12
(Datu & Yang, 2021) "Academic buoyancy, academic motivation, and academic achievement among filipino high school students"	11

## Discussion

### *Academic Buoyancy Affects Academic Achievement Mediated by Control*

Previous study explored academic buoyancy as an effort to gain increased understanding regarding the construct of academic buoyancy, by specifically exploring its relationship with academic achievement in students and testing whether an individual's feelings of control over academic results (internal locus and controllability) can play a role in a system that connects academic buoyancy with academic achievement for participants (Collie et al., 2015). Before the exploration implemented by previous study there was similar research that examined the relationship between the two constructs in the domain of a sample of inclusive school students (Andrew J. Martin, 2014).

In an academic context, a definition close to control is a condition where a student may have a feeling of certainty/uncertainty about how well his academic performance will go or whether he can avoid poor performance related to schoolwork (Collie et al., 2015; Nardo et al., 2022). From another perspective, attribution has a perspective that is not much different from the definition of control, where control allows individuals to gain internal and controlled influence for subsequent actions in the form of feelings about previous results (Weiner, 2010). For example, suppose students attribute poor academic grades to causes that are internal and controllable (for example, not reading enough books). In that case, the changes made by students will be related to these causes (that is, by reading books regularly) in order to avoid the same result. On the other hand, if students attribute their poor academic grades to external and uncontrollable causes (such as an unsupportive friendship environment), then students may not try to make changes because they feel there is nothing they can do (Collie et al., 2015; Weiner, 2010). Thus, they may not change their approach to schoolwork or when faced with other upcoming challenges. Specifically, examples of sentences that describe control are 'When at the end of the semester I get a high grade, I find it difficult to believe that I will get that grade again' or 'When I am not able to understand the material well in class, I feel unsure that I able to avoid it happening again' (Collie et al., 2015; Restu, 2020).

From this research, it can be seen that control acts as a mediator between academic buoyancy and academic achievement based on the results of analysis using confirmatory factor analysis methods and structural equation modeling. Positive experiences that students want to collect, such as when they successfully overcome academic challenges or obtain stable high grades, will increase their ability to control or have higher levels of control related to academic results in the future. Students may have a greater capacity to successfully overcome setbacks and achieve higher academic achievement.

### ***Academic Buoyancy Mediates Academic Achievement Improvement in the Form of Learning Strategies***

Previous study explored the potential of academic buoyancy as a mediator in the context of the relationship between academic anxiety and the learning strategies used by students in their learning process (Collie et al., 2017). Anxiety in living academic life can give rise to maladaptive behavior that is detrimental to students, even though it is only characterized by feelings of worry and nervousness. Mixed exploratory results may emerge in research linking anxiety with academic achievement, but most show anxiety as a negative predictor of academic achievement. In adolescent students, anxiety becomes negatively related to academic buoyancy (A J Martin & Marsh, 2006; Andrew J. Martin & Marsh, 2008), so academic buoyancy may be one mediator that influences the extent to which anxiety can support or harm academic achievement.

Four types of learning strategies were identified in research namely cooperation, elaboration, memorization, and personal best goals (Collie et al., 2017). Collaboration refers to students' ability to bring themselves to empower all support in the form of teamwork. Students who adopt a more cooperative pattern when learning tend to feel that they learn more effectively when working together with other students. Memorizing is related to several learning strategies such as learning keywords, reading material aloud many times, and so on, so that students get the right representation regarding the information being studied. Elaboration is a process of in-depth understanding that connects what the individual already knows with what the individual is learning and can interpret this connection firmly. The goal of personal best is a motivational component that shapes students into individuals who have specific learning goals, makes themselves challenged, arouses passion for competition, and is based on improving self-quality (Cole & Feng, 2015; Marsh et al., 2006).

From the results of this research, academic buoyancy is considered to be able to mediate only partially related to 3 learning strategies, namely elaboration, memorization, and personal best goals. However, academic buoyancy is a complete mediator of the relationship between anxiety and cooperation. If students' academic anxiety is at a low level, then they will feel able to respond to academic challenges.

### ***Academic Buoyancy Affects Level of Academic Achievement Mediated by Autonomous Motivation***

Previous study explored the mediating role of motivation in an academic context on the relationship between academic buoyancy and achievement in school (Datu & Yang, 2021). Academic motivation is manifested in the form of learning activities that effectively encourage individuals to achieve academic goals (Andrew J Martin, 2002). Self-determination theory plays a role in identifying three types of motivational orientation that are clearly relevant to academic achievement, namely, controlled motivation, amotivation, and autonomous motivation. Controlled motivation takes an extrinsic element in forming encouragement when students are involved in academic activities. Amotivation is characterized by the condition of students whose motivation drastically decreases or even disappears. Autonomous motivation relates to students' intrinsic drives that are relevant to values in the learning process (Datu, 2017; Datu et al., 2018).

The results of the mediation analysis, which show that there is an indirect effect of academic buoyancy through autonomous motivation on academic achievement, show that only autonomous motivation has a mediating role regarding the relationship between academic buoyancy and academic achievement. Descriptive and correlational analysis shows that the higher the academic buoyancy, the higher the controlled motivation, autonomous motivation, and academic achievement, so that a positive relationship is formed between these four constructs (Datu & Yang, 2021; Tarmizi & Bayat, 2010). On the other hand, academic buoyancy was found to have no relationship with amotivation. Furthermore, the relationship between controlled motivation and autonomous motivation with academic achievement was recorded as a positive relationship. The positive relationship between autonomous motivation and academic achievement in this study strengthens the arguments in previous explorations about how psychological autonomous motivation can be useful for improving academic adjustment and academic achievement. Meanwhile, amotivation and academic achievement have a negative relationship (Datu & Yang, 2021; Saat et al., 2016).

From the findings of this research, it can be learned that students who have higher abilities when responding to daily difficulties in the academic context at school and involve adaptive intrinsic motivation in their academic activities will get better academic achievement. By promoting all opportunities to fulfill the individual's need for competence, intrinsic motivation that is beneficial for the individual will increase, as shown by the positive relationship between academic buoyancy and autonomous motivation (Niemi & Ryan, 2009).

### **Implications for Guidance and Counselling**

Control plays an important role in as an important position that determines whether an individual setback will affect academic achievement in the future. For this reason, guidance and counseling practitioners can provide services that support a sense of control with a relevant approach so that when there is an established sense of control in students, an established academic buoyancy will also be formed in students so that they are able to support their academic achievement. A potential approach recommended for guidance and counseling educators to support a sense of control is the formation of a growth learning mindset (Biasi et al., 2017; Dweck & Master, 2009), where in this approach, guidance and counseling practitioners can provide guidance services in individual, group or classical formats, which focuses on increasing students' ability to achieve changes in their abilities and outcomes that are influenced by a sense of control. Guidance and counseling services provided by practitioners through this approach will also serve as an element of the student's learning environment that helps promote a sense of competence and supports autonomy rather than a sense of uncontrolled control (Bernard et al., 2017; Reeve & Jang, 2006; Supina, 2018). This approach also encourages students to focus on what academic factors they can control (for example, strategies and attitudes) so that the efforts provided by guidance and counseling practitioners will help their sense of empowerment toward a sense of control in the academic process.

The findings state that academic buoyancy is a mediator of the negative relationship between anxiety and academic achievement supports a number of previous findings which shows that high academic buoyancy is characterized by low anxiety (Andrew J. Martin et al., 2010; Andrew J. Martin, Ginns, Brackett, et al., 2013). Guidance and counseling practitioners can intervene to increase academic buoyancy by targeting aspects of anxiety in students, as argued that interventions on academic buoyancy will be more effective if targeted at building multidimensional elements, one of which is anxiety (Collie et al., 2017; Andrew J. Martin & Marsh, 2008). Approaches that can be applied by guidance and counseling practitioners include social and emotional approaches applied in small group settings (group counseling), classical, or individual (conventional counseling) so that they can help group members recognize and manage emotions related to academic anxiety.

Based on the research it is known that autonomous motivation supports the positive relationship between academic buoyancy and academic achievement (Datu & Yang, 2021). Through the results of this research, guidance, and counseling practitioners need to involve increasing autonomous motivation in providing services related to academic buoyancy. For example, school counselors can develop psychoeducational programs and concepts that aim to increase students' intentional capacity to successfully face small school-related problems such as failure to participate actively in school activities (Datu & Yang, 2021; Taştan et al., 2018). Guidance and counseling practitioners can shape interventions that offer more opportunities for students to consciously understand the importance of effectively coping with daily struggles in the school environment. Counselors working from a motivational approach can change their client's goal avoidance framework to motivational framework by One of the suggested approaches is Systematic Motivational Counseling (SMC), where through this approach, guidance and counseling practitioners can make several changes and improvements to students' motivational structures so that students will carry out activities related to academic achievement by following appropriate goals and activities. This is driven by the desire to achieve emotional satisfaction.

## **4. CONCLUSION**

Research on the effect of academic buoyancy on academic achievement in high school students in the last decade has generally shown results in the form of a positive influence. Academic buoyancy is proven to have a direct positive influence on academic achievement in general or specifically in certain subjects such as mathematics so that there can be an increase in academic achievement in school students. Academic buoyancy is also proven to indirectly positively influence academic achievement through certain variables such as autonomous motivation and control. In addition, research also proves a positive effect when academic buoyancy mediates certain variables, such as anxiety, on academic achievement.

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