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THE INFLUENCE OF GOOGLE SITES ON IPAS LEARNING ON SELF REGULATED THROUGH STUDENT LEARNING MOTIVATION

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Abstract :

This study aims to examine the impact of utilizing Google Sites on students' self-regulated learning (SRL) abilities within Integrated Natural and Social Sciences (IPAS) instruction, with learning motivation acting as a mediating variable. The research is grounded in the urgent need for educational transformation toward interactive, technology driven learning that cultivates learner autonomy in the context of 21st century education. Employing a quantitative descriptive approach through a case study design, the research involved 100 upper-grade students from SDN Jrebeng Kulon 1, Probolinggo City. Data were gathered using structured questionnaires and analyzed using path analysis to determine both direct and indirect effects among the studied variables. Findings reveal that the integration of Google Sites exerts a positive and statistically significant influence on students' self-regulated learning, with an R Square value of 0.289, indicating that 28.9% of the variance in SRL is jointly explained by Google Sites usage and learning motivation. Moreover, learning motivation functions as a mediating factor that strengthens this relationship. These results align with Zimmerman's (2023) Self Regulated Learning Theory and Deci & Ryan's (2000) Self-Determination Theory, which emphasize autonomy, competence, and social relatedness. Theoretically, the study reinforces the pedagogical potential of digital technology integration in stimulating cognitive, affective, and metacognitive domains. Practically, it recommends that educators employ Google Sites not merely as a content delivery platform but as a transformative medium to cultivate adaptive, technology-based learner autonomy.

Keywords : *Google Sites; Self-Regulated Learning; Learning Motivation*

INTRODUCTION

Tech's been movi mad, yeah, turnin' education into suttin that ain t boxed in by them old-school chalk and-talk methods no more. Google Sites, one of them collab platforms, makes it bare easy to whip up content that's eye catchin and interactive and that. This lets the students get properly stuck in, actually takin part in the lessons, makin the whole learnin experience hit different and feel way more meaningful (Ratnadewati, Himawan, & Hermanto, 2023). Traditional ways of teachin be strugglin heavy when it comes to keepin the students locked in and focused, ya get me. Bringin in tech like Google Sites helps man deal with them issues by switchin up how the lessons get dropped, plus fixin the lack of proper learning materials over at SDN Jrebeng Kulon 1. Once teachers clock how

effective Google Sites really is, they can pattern up their teaching style to make lessons way more interestin and less dead. On top of that, solid and constructive feedback gets the students gassed to learn more and pushes em to keep graftin and not give up (Hasnaa & Sahronih, 2022).

Man really needs to pattern up and ditch them old, dusty teaching methods, cah the times ain't waitin for no one and educations gotta keep pace with how fast things are movin (Purba, Sitepu, & Silaban, 2022). Learning that's still rollin with traditional approaches and sufferin from a lack or limits in teaching materials usually just banks on one way chat from the teacher, which, real talk, don't cut it no more in todays fast movin times and the skill demands of the 21st century. Them dusty methods tend to box in students creativity, barely get em involved properly, and often flop at preparing em for the madness of the real world. Because of that, there's bare urgency to jump onto more interactive learning approaches, like tech-based learning using Google Sites and patternin' in other tech as well, so students can learn in a way that's more engaging, more relevant, and actually usable in real life(Arumingtyas, 2021).

Switchin up them teaching methods is just as important for buildin a learning space that's more inclusive and switched on, one that actually respects different learnin styles and the individual needs of each student (Ningsih & Bukit, 2022). When man's tryin to deal with different learnin styles while there's bare limits on teachin materials, it can leave students with specific learnin needs feelin' unmotivated and stuck, makin it peak for em to level up. By jumpin on more modern teaching methods, like patternin lessons through Google Sites, it gives man a way to switch up the game boostin students motivation, pushin their independent learnin, and gettin' proper collaboration poppin between the mandem in class (Deng & Tavares, 2015). Educators can more effectively help each student reach their full potential. This will also prepare students with critical thinking, problem-solving, and self-regulation skills that are highly needed in the world and everyday life in this digital era.

IPAS (Natural and Social Sciences) learning is an educational approach that integrates concepts and materials from two disciplines: Natural Sciences and

Social Sciences. The goal is to provide students with a holistic understanding of the world, both from scientific and social perspectives. In this learning process, students are encouraged to develop critical, analytical, and creative thinking skills, as well as to understand the interconnection between natural phenomena and their social contexts (Orengo et al., 2020). Through this approach, students are expected to build awareness of global and environmental issues and be able to apply the knowledge they have gained in their daily lives.

IPAS learning plays an important role in shaping students' understanding of the world around them by integrating concepts from natural and social sciences. (Hayunnita, Yuliani, & Nasir, 2023). Considering the complexity of the material being taught, innovative learning methods are highly needed to maintain students' interest and motivation. The use of Google Sites can be an effective way to present information in a more interactive and engaging manner. Learning motivation is a key factor that makes the learning process more dynamic and interesting. Therefore, learning motivation can serve as a variable that influences the use of Google Sites and students' self-regulation. Motivated students will strive to achieve their academic goals and actively participate in the learning process (Putri, Sujana, & Ali, 2024).

Similarly, the use of Google Sites can increase when students are well-motivated, as learning motivation makes the learning process more interactive and collaborative, allowing students to feel more engaged in the learning experience. The use of Google Sites provides students with space to explore their thinking. When students have the freedom to think independently in completing tasks, it can enhance their self-confidence. Further research is needed to identify the extent to which this influence occurs within the context of IPAS learning.

The digital learning environment created with the help of teaching materials in the form of Google Sites can provide space and experiences that support collaboration and interaction among students (Nguyen, 2022). In the context of IPAS learning, collaboration among students can enrich their understanding of the material while also enhancing their motivation and desire to learn independently. Independent learning is a process in which students must

be able to regulate themselves, set goals, monitor progress, and engage in reflection. By utilizing Google Sites, students can manage their learning materials, collaborate with peers, and receive constructive feedback.

This also allows students to experience a learning environment that fosters self-regulation through learning motivation, which aligns with the constructivist theory that will be used as the grand theory in this study. Students have different learning styles and needs. Google Sites offers the flexibility to adapt learning materials according to students' individual needs (Sigler, Gilabert, & Villalba Méndez, 2022). Thus, this platform can serve as an effective tool to reach various types of learners in the context of IPAS learning.

Previous studies have examined the use of technology in education, one of which was conducted by Hidayat et al. (2024) titled The Use of Google Sites in Building Collaboration on Corrosion Material Viewed from Students' Learning Independence. However, that study did not include a mediating variable as in the research that will be conducted in this study. There are 20 studies that specifically explore the influence of Google Sites on IPAS learning and its relationship with motivation and self-regulation, but many of these studies only used variables X and Y without including a mediating variable (Z).

Based on the background described above, the research questions are as follows: 1) Does the use of Google Sites in IPAS learning affect students' self-regulation? 2) Does students' learning motivation serve as a mediating variable in the influence of Google Sites usage on students' self-regulation? 3) How do the use of Google Sites and learning motivation influence students' self regulation? This research is expected to provide a new contribution to the existing literature and offer guidance for educators in effectively implementing technology. It aims to fill the gap in the current literature regarding the influence of Google Sites in IPAS learning, focusing on learning motivation and self-regulation. It is hoped that the findings of this study can provide practical guidance for teachers and educational institutions in effectively integrating technology into the learning process.

RESEARCH METHOD

This research employs a quantitative approach with a descriptive method based on a case study. The quantitative method is grounded in the philosophy of

positivism and focuses on hypothesis testing through statistical analysis of numerical data systematically obtained from a specific population. The study aims to measure the relationships among variables using structured instruments such as surveys and questionnaires. This approach allows for generalization of the results and produces objective, valid, and replicable findings. The research variables include self-regulated learning (Y), the use of Google Sites (X), and learning motivation (Z). Self-regulated learning is understood as students' ability to manage, control, and evaluate their learning processes independently. Google Sites functions as an interactive digital learning medium that supports collaboration, accessibility, and learning effectiveness. Learning motivation reflects the internal and external drives that influence students' perseverance in achieving academic goals. The research population consists of 100 upper-grade students from SDN Jrebeng Kulon 1, Probolinggo City, selected using a sampling technique. Data analysis includes validity, reliability, normality, multicollinearity, and heteroscedasticity tests, as well as path analysis to examine the relationships among variables.

FINDINGS AND DISCUSSION

Results

The Influence of Google Sites on Students' Self-Regulation The analysis shows that there is a positive relationship between the use of Google Sites in learning and students' ability to manage their learning independently, or self-regulation. This relationship indicates that the better students utilize Google Sites as a learning medium, the higher their ability tends to be in planning, monitoring, and evaluating their learning processes independently (Gambo & Shakir, 2021). Although this relationship is not classified as very strong, it sufficiently indicates that Google Sites has a meaningful impact on how students manage their own learning. The contribution of Google Sites to students' independent learning ability is considered quite significant. The platform plays a role in encouraging students to take greater responsibility for their learning processes, especially within the context of technology based learning.

This discussion generally reinforces the view that digital media such as Google Sites can serve as an effective tool in enhancing students' learning independence. However, to obtain a more comprehensive and accurate picture, a more holistic approach is neededone that considers students' psychological, social, and environmental dimensions in the learning process. In conclusion,

there is a significant influence of Google Sites usage on students' self-regulation, mediated by learning motivation. Learning motivation acts as a mediating variable that strengthens the relationship between the use of learning technology and students' learning independence. When students possess high motivation, they tend to be more active in exploring and utilizing the digital learning features offered by Google Sites, which directly contributes to improving their ability to manage their learning independently.

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Therefore, teachers need to be more proactive in designing digital learning experiences based on platforms such as Google Sites, which encourage students not only to receive material but also to evaluate, organize, and plan their learning activities independently. Such learning strategies will improve both the quality of the learning process and its outcomes as a whole. **Learning Motivation Mediates the Influence of Google Sites on Students' Self-Regulation** This study shows that the use of Google Sites has a significant influence on students' self-regulated learning ability in IPAS education. This is reflected in the R Square value of 0.289, which means that approximately 28.9% of students' ability to manage, control, and direct their learning processes can be explained through the use of Google Sites and learning motivation. This percentage is relatively high and indicates that the presence of digital learning media such as Google Sites can effectively support the development of independent and goal-oriented learning.

In its application, students are required to access materials independently, complete assignments, and follow digitally provided instructions. This process encourages active engagement, making students not only passive recipients but

also active participants in managing their learning. Such independence indirectly strengthens intrinsic motivation, as students feel responsible for their own learning achievements. Further research also shows that the use of Google Sites has a significant effect on students' self-regulated learning ability. This is reflected in an R Square value of 0.289, which means that approximately 28.9% of the variation in students' self-regulation ability can be explained by the combination of Google Sites usage and learning motivation. This relatively high percentage indicates that both variables are strong predictors contributing to the development of students' ability to plan, monitor, and evaluate their learning activities independently and purposefully.

The respondents' opinions also reinforce these findings. Based on the collected data, the majority of students agreed or strongly agreed that the use of Google Sites increased their enthusiasm for learning. Respondents stated that they felt more motivated to learn because the materials presented on Google Sites were easy to access, engaging, and equipped with challenging practice exercises. In addition, students reported that their grades in IPAS subjects improved after using Google Sites, reflecting an enhancement in learning quality. The ability to complete exercises individually also trained students in problem solving, which is a core aspect of independent learning.

Thus, this platform provides a conducive learning environment for fostering students' independence and sense of responsibility toward their learning process. The relationship between Google Sites and students' learning motivation is also reflected in the correlation value (R) of 0.537, which indicates a positive and fairly strong relationship between the two variables. The more frequently and effectively Google Sites is used in the learning process, the higher the students' level of motivation. This finding aligns with the learning motivation theory proposed by Siok (2023), which states that learning technology serves as an external factor that plays a crucial role in enhancing students' motivation, particularly in fostering curiosity, emotional engagement, and a high enthusiasm for learning. Learning motivation also acts as a mediating variable that strengthens the relationship between the use of Google Sites and students' self-regulated learning ability. In other words, the positive influence of Google Sites usage on learning independence becomes stronger when students possess high learning motivation. This indicates that success in implementing digital learning media depends not only on the technology itself but also on the extent to which students have internal drive and motivation to learn.

In other words, technology serves only as a supporting tool, while learning motivation remains the main driving force behind students' success. However, the fact that about 12.1% of the variation in self-regulation cannot be explained by this model indicates that there are other factors beyond the use of Google Sites and learning motivation that also play important roles. Some of these external factors include teacher support in the learning process, parental involvement at home, a conducive learning environment, as well as students' internal factors such as self-confidence, discipline, interest in the subject, and metacognitive ability. Therefore, a holistic and integrative learning approach is highly recommended so that all factors supporting learning independence can be optimized simultaneously.

Teachers can also design engaging content such as online quizzes, instructional videos, and discussion forums to maximize student engagement. In addition, providing training for teachers on the effective use of digital learning media is essential to ensure they have the competence to manage technology-based learning efficiently. The Influence of Google Sites Usage in IPAS Learning on Self-Regulation through Learning Motivation This study presents strong evidence that the use of Google Sites in IPAS learning has a significant impact on improving students' self-regulated learning abilities. Google Sites functions not only as a medium for delivering information but also as a tool capable of stimulating active student engagement.

Through this digital learning approach, students are encouraged to manage their time, set goals, and complete tasks independently, both inside and outside the school environment. In this process, students become the main agents of their own learning activities, which is the core of the self-regulated learning concept. The interactivity, flexibility, and accessibility of Google Sites are key factors that enable students to optimally develop their learning independence. Data analysis revealed an R Square value of 0.289, indicating that approximately 28.9% of the variation in students' self-regulation abilities can be explained by the variables of Google Sites usage and learning motivation. This is a relatively high percentage, suggesting that technology integration particularly the use of Google Sites has a substantial impact on students' academic achievement and learning attitudes. The more frequently and effectively students use Google Sites, the higher their level of learning independence becomes. They tend to be more disciplined, responsible, and focused in their learning process.

The increase in learning motivation is also evident in how students set

goals, design learning strategies, and monitor their progress independently. Google Sites provides features that support these processes, such as assignment calendars, downloadable materials, self-practice exercises, and links to additional learning resources. All of these elements create a learning environment that fosters the development of key competencies, including independence, information management skills, and personal responsibility for the learning process. (Gönül & Durak, 2025). The results of this study provide an important contribution to the development of educational practices in the digital era, particularly in utilizing technology as an effective learning medium. These findings indicate that the use of Google Sites not only introduces technology into the classroom but also genuinely enhances the quality of both the learning process and student outcomes, especially in fostering self-regulated learning and independence.

Discussion

The results of the research analysis show that there is a positive and significant influence between the use of Google Sites as a learning medium and students' ability to manage their learning independently, or self-regulated learning (SRL) (Kaplan et al., 2023). This finding confirms that the more effectively students utilize Google Sites in the learning process, the higher their ability to plan, monitor, and evaluate learning activities independently. This indicates that Google Sites functions not only as a medium for delivering instructional materials but also as a digital environment that fosters students' learning autonomy in the era of technology-based education (Syah,Artanita, 2025).

This relationship aligns with the Self-Regulated Learning theory proposed by Zimmerman (2023), which emphasizes that students with strong self-regulation skills are those who can control three key aspects of learning: the metacognitive aspect involving planning and reflection, the motivational aspect involving self-belief and learning goals, and the behavioral aspect involving time management and learning strategies (Kovač, Portelas, Dominey, & Oudeyer, 2024). In this context, Google Sites provides various features that support these processes, such as task management, learning material storage, and collaborative spaces for reflection and feedback (Saputra, 2019). Furthermore, Bandura's (1986) Social Cognitive Theory also explains that self-directed learning is formed through the reciprocal interaction between personal, environmental, and behavioral factors.

Google Sites creates a digital learning environment that allows students to observe, interact, and emulate effective learning strategies from both teachers and classmates (Zhang, 2024). This process strengthens *students' self-efficacy* or self-confidence in their ability to organize and complete study tasks independently. Although the influence *of Google Sites* on learning independence was found to be significant, the study also acknowledged that digital media is not the only determining factor in the formation of SRL skills. Other factors such as intrinsic motivation, teacher support, home learning environment, and previous learning experiences also play an important role (Kurbanov et al., 2024). In this case, the research findings support the view of Boekaerts (2016) who affirms that *self-regulated learning* is the result of a complex interaction between cognitive, affective, and contextual factors.

Second, the competence aspect arises because students can assess their progress through evaluation features or online quizzes. Third, the aspect *of relatedness* is realized through digital collaboration between teachers and students in online discussion forums provided on *Google Sites*. The correlation results of the study showing a value of R = 0.537 reinforce the finding that the relationship between learning motivation and *Google Sites use* is quite strong. This means that the higher the students' motivation to learn, the more effective the use of *Google Sites* in improving *self-regulated* learning skills. Thus, the platform not only provides technological support, but also facilitates psychological needs that encourage deeper learning engagement. Integration of Cognitive Theory and Digital Constructivism From the perspective of cognitive theory and constructivism, the use of *Google Sites* can be seen as a real application of digital constructivism. This theory, as put forward by Jonassen (2000), emphasizes that learning technology should function as a mindtool tool that helps students build knowledge through reflective and collaborative thinking processes (Pore & Roy, 2024).

With Google Sites, students can create their own content, create digital notes, link to external sources, and reflect on their understanding of the material on an ongoing basis. In addition, Vygotsky's (1978) theory of *Social Constructivism* explains that effective learning occurs in the *Zone of Proximal Development* (ZPD), where students can develop more optimally with the support of the social environment and *scaffolding tools*. In the digital context, *Google Sites* serves as a *scaffolding tool* that provides structured support for students to develop learning independence gradually. The teacher plays the role of a directing facilitator, not

as the only source of knowledge. Implications for 21st Century Learning This research is also relevant to the demands of 21st century education, where independent learning skills, digital literacy, and critical thinking skills are the main competencies that students must possess (Sharma, 2025).

According to Trilling and Fadel (2012), 21st century learning emphasizes the integration of the 4C *skills of critical thinking, communication, collaboration,* and *creativity*. *Google Sites* supports all four through interactive features that enable collaboration, discussion, and publication of learning results online. In practice, students who use *Google Sites* show improvements in reflective thinking skills, problem-solving skills, and metacognitive awareness. They not only consume information, but also produce knowledge through a constructive process (Albar, Masitoh, Kristanto, & Rajiman, 2025). This shows a paradigm shift from *teacher-centered learning* to student-centered learning. Analysis of Research Models and External Factors R Square values of 0.289 shows that approximately 28.9% variation in self-regulated learning abilities can be explained by a combination of *Google Sites use* and learning motivation.

This percentage is quite substantial in the context of educational research, given that learning behavior is influenced by many external variables. However, there are still 71.1% of other variables that have not been explained by the model, such as teacher support, home learning environment, and student psychological factors. These external factors are supported by the theory *of Ecological Systems* (Bronfenbrenner, 1979), which states that students' learning behavior is the result of dynamic interactions between individuals and their social environment. Therefore, the effectiveness of using *Google Sites* will increase if it is supported by a positive learning climate, adaptive teacher guidance, and technological support from schools and parents (Hwang, 2025). Theoretical and Practical Contributions Theoretically, this study strengthens the foundation that technology-based learning media has an important role in the formation of learning independence, especially if it is designed based on motivational and constructivistic principles.

These findings expand the understanding that *self-regulated learning* is not simply an individual's ability to learn on their own, but is the result of a complex interaction between technological factors, motivation, and the social environment. Practically, this study provides strategic recommendations for educators in optimizing the use of *Google Sites* in digital classrooms (Abdullah, 2021). Teachers need to design learning that not only emphasizes mastery of the material, but also on reflective and evaluative processes that encourage students

to set goals, monitor progress, and evaluate their own learning outcomes. As such, *Google Sites* can serve as an adaptive learning platform that encourages active engagement and student learning responsibility. In addition, training for teachers in the use of learning technology is crucial for *Google Sites* integration to run effectively. Digitally literate teachers will be able to create interactive content such as engaging online quizzes, discussion forums, and learning videos, which can ultimately increase student engagement and motivation.

CONCLUSION

In other words, technology serves only as a supporting tool, while learning motivation remains the main driving force behind students' success. However, the fact that about 12.1% of the variation in self-regulation cannot be explained by this model indicates that there are other factors beyond the use of Google Sites and learning motivation that also play important roles. Some of these external factors include teacher support in the learning process, parental involvement at home, a conducive learning environment, as well as students' internal factors such as self-confidence, discipline, interest in the subject, and metacognitive ability. Therefore, a holistic and integrative learning approach is highly recommended so that all factors supporting learning independence can be optimized simultaneously. The practical implications of this study are significant for teachers and school policymakers. Teachers are encouraged to integrate Google Sites optimally into the learning process—not only as a platform for uploading materials but also as an interactive space that facilitates discussion, reflection, independent assignments, and learning evaluation.

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