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Student-led Classroom: Review on the Advantages and Disadvantages

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Abstract

This paper examines the benefits and drawbacks of student-led classrooms within the context of constructivist learning theory. The principles of constructivism align with this educational approach, which emphasizes active participation, social interaction, and contextual learning. The study investigates the influence of student-led classrooms on factors such as engagement, critical thinking, and knowledge retention. Although constructivist approaches, such as problem-based and inquiry-based learning, have notable advantages, they also pose difficulties, such as the requirement for explicit instruction and resource intensity. The study examines existing literature on the efficacy of student-led classrooms and asynchronous online discussion forums (AODFs), providing valuable insights into techniques that improve student engagement and learning outcomes.

Keywords: student led-classroom, active learning, critical-thinking.

I. INTRODUCTION

Recently, there has been a growing trend in educational paradigms to emphasise student engagement and active participation. Student-led classrooms have become a prominent model that embodies the principles of constructivist learning theory. Constructivism, based on the theories of scholars such as Piaget and Vygotsky, suggests that learners actively build their own understanding and knowledge by engaging in experiences and reflecting on them. This educational approach prioritises the learner's active engagement in the learning process rather than simply receiving information passively. The transition towards student-led classrooms exemplifies a wider pattern in education that seeks to cultivate autonomy, critical thinking, and collaboration among students.

Student-led classrooms provide a dynamic setting in which learners assume substantial responsibility for their educational experience. In this model, teachers shift from being the main providers of knowledge to becoming facilitators who assist and encourage students in their process of exploring and constructing knowledge. This approach is in accordance with Vygotsky's concept of the zone of proximal development (ZPD), which emphasises the significance of social interaction and collaborative learning in improving cognitive development. Through participation in peer-to-peer learning and practical problem-solving activities, students are more inclined to cultivate a profound comprehension of the subject matter and enhance their ability to retain knowledge.

However, the implementation of student-led classrooms is not without its difficulties. Detractors argue that a lack of substantial guidance may prove to be less

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effective for inexperienced learners who may require more organised assistance. Moreover, the process of establishing and sustaining an engaging and nurturing learning atmosphere can impose substantial requirements on educators due to its resource-intensive nature. Although there are difficulties, the advantages of student-led classrooms, such as heightened involvement, enhanced analytical thinking abilities, and improved knowledge retention, render them a compelling method for contemporary education.

This paper seeks to examine the benefits and drawbacks of student-led classrooms by conducting a thorough analysis of existing literature and theoretical frameworks. The study will analyse the influence of this educational approach on student involvement and academic achievements, taking into account the possible advantages and difficulties it presents. This study aims to offer a well-rounded view of the effectiveness of student-led classrooms in promoting a more enriched educational experience through the examination of both empirical evidence and theoretical insights.

II. THEORETICAL PERSPECTIVE

The constructivist learning theory, a fundamental principle in educational psychology, asserts that learners actively form their own comprehension and expertise by actively participating and contemplating their experiences. This theory emphasises the significance of active engagement, in which cognitive processes play a central role in the creation of knowledge rather than simply receiving information passively. Prominent scholars such as Piaget and Vygotsky have highlighted the significance of accommodation and assimilation processes, as well as the crucial role of social interaction and guidance in the development of cognition. Contextual learning, a cornerstone of constructivism, asserts that connecting knowledge to relevant circumstances enhances its comprehension and retention. This principle gives rise to instructional approaches such as problem-based learning (PBL) and inquiry-based learning.

Student-led classrooms exemplify the tenets of constructivist education, cultivating settings in which students actively engage in their own learning and fostering autonomy, cooperation, and analytical thinking. In these settings, teachers assume the role of facilitators, providing guidance and support to students as they independently explore and construct knowledge. This approach is consistent with Vygotsky's zone of proximal development, which states that peer collaboration improves comprehension. Student-led classrooms enhance the relevance and engagement of education by incorporating real-life problems and projects. This approach aligns with the constructivist philosophy, which emphasises active, contextual learning and the construction of knowledge through experience and reflection.

2.1. Constructivist Learning Theory

The constructivist learning theory, a fundamental framework in educational psychology, proposes that learners actively build their own understanding and knowledge of the world by engaging in experiences and reflecting on those experiences. This theory emphasises the learner's proactive participation in the learning process, asserting that the individual's cognitive processes actively construct knowledge instead of passively receiving it. The core of this theory revolves around the concept of active learning, in which students actively participate in and comprehend their experiences. Piaget (1972) supports this idea by positing that the processes of accommodation and assimilation form knowledge. Vygotsky et al. (1978) further developed this idea by emphasising the significance of social interaction in the process of learning. He introduced the concept of

the zone of proximal development (ZPD), which emphasises the role of guidance and collaboration in cognitive ability development.

The constructivist learning theory emphasises the significance of contextual learning, which suggests that knowledge is most effectively comprehended and remembered when it is connected to the specific situation in which it is used. Brown et al. (1989) posited that learning involves assimilation into a community of practice, wherein learners acquire the behaviours, skills, and understandings that are typical of the group. Bruner (1966) proposed that learners utilise their existing knowledge to develop new comprehension through constructive processes, arguing that learning is an active process that forms novel concepts by building upon current and previous knowledge.

Constructivist principles in education have led to the creation of various instructional strategies. Problem-Based Learning (PBL) is an instructional approach that requires students to solve problems, which promotes critical thinking, collaboration, and self-directed learning (Barrows, 1996). Scaffolding, a pedagogical technique, aligns with Vygotsky's zone of proximal development (ZPD) concept (Wood et al., 1976). Inquiry-based learning encourages students to actively participate in asking questions, carrying out investigations, and constructing knowledge through exploration and discovery. It places a strong emphasis on fostering curiosity and utilising the scientific method (Hofstein & Lunetta, 2004).

Nevertheless, constructivist approaches are not exempt from criticism. There is a contention that the theory fails to adequately acknowledge the significance of explicit teaching and the value of fundamental knowledge. In their 2006 study, Kirschner et al., criticised the use of minimal guidance in instruction, arguing that it is not as effective for beginner learners who benefit more from explicit guidance and practice. In addition, the adoption of constructivist approaches can be demanding in terms of resources, necessitating substantial time and effort from educators to create and facilitate appropriately stimulating and supportive learning opportunities.

Despite these challenges, constructivist learning theory offers valuable insights into the essence of learning and the creation of efficient educational settings. Constructivism, through its focus on learner autonomy, collaboration, and critical thinking, continues to inspire instructional strategies that improve the educational experience and promote deeper understanding. The constructivist learning theory is closely related to the concept of a student-led classroom, which is an educational approach in which students actively participate in their own learning processes. This approach is perfectly in line with the fundamental tenets of constructivism, which prioritise active learning, social interaction, contextual learning, and constructive processes.

Teachers carefully design the learning environment in a student-led classroom to foster independence, active participation, and the development of analytical skills. This arrangement enables students to engage actively in their education rather than passively acquire information from the teacher. According to the principles of constructivism, learners acquire knowledge by engaging in and reflecting on experiences. When students take charge of their own learning, they are more inclined to actively participate in the subject matter, comprehending it by applying their own viewpoints and existing knowledge. Piaget (1972) explained this cognitive process as accommodation and assimilation.

Vygotsky's et al. (1978) notion of the zone of proximal development (ZPD) provides additional backing for the student-led classroom model. Within this context, students frequently engage in collaborative work, acquiring knowledge from one another

and offering reciprocal assistance. This peer interaction facilitates learners in accomplishing tasks that they may not be capable of completing on their own but can successfully achieve with the assistance of their peers. This allows them to operate within their zone of proximal development (ZPD). The teacher's role transitions from being the primary source of knowledge to that of a facilitator who guides, supports, and challenges students as necessary, providing them with the necessary structure for their learning experiences (Wood et al., 1976).

Classrooms where students take the lead seamlessly incorporate the principle of contextual learning, derived from constructivism. These environments frequently employ real-life problems and projects that are relevant to students' lives and future careers. Students are more likely to perceive the significance of their learning and improve their knowledge retention through active involvement in genuine tasks. This is consistent with the concepts put forth by Brown et al. (1989), who highlighted that learning involves becoming part of a community of practice through cultural immersion.

Furthermore, student-led classrooms, where students develop new comprehension by drawing upon their existing and previous knowledge, embody the constructive processes emphasised by Bruner (1966). We encourage students to engage in inquiry, explore a variety of resources, and create their own solutions to problems. According to Hofstein and Lunetta (2004), using an inquiry-based approach facilitates the development of profound comprehension and cultivates a mindset of continuous learning throughout one's life.

Nevertheless, it is crucial to acknowledge and respond to the criticisms of constructivism within the framework of student-led classrooms. Kirschner et al. (2006) contend that providing minimal guidance during instruction may be less efficacious for novice learners. In order to address this issue, student-led classrooms should adopt a well-balanced approach in which the teacher initially offers guidance and then gradually delegates responsibility to the students as they demonstrate increased competence. Every student, regardless of their initial level, receives the necessary assistance to achieve success through the systematic transfer of responsibility.

To summarise, constructivist learning theory offers a strong framework for the student-led classroom model. Student-led classrooms cultivate a setting that empowers learners to actively participate, engage in social interaction, learn contextually, and employ constructive processes. This approach promotes deeper understanding and develops lifelong learning skills.

III. LITERATURE REVIEW

Asynchronous online discussion forums (AODFs) and student-led classrooms are effective pedagogical tools that enhance student engagement and improve learning outcomes. AODFs offer students the opportunity to interact with the content at their preferred speed, which promotes enhanced contemplation and more deliberate responses (Hrastinski, 2009). Research has proven that student-led classrooms, characterised by autonomy, collaboration, and active learning, enhance student engagement and boost academic performance by promoting better comprehension, critical thinking, and long-term memory retention (Prince, 2004; Hattie, 2008). This literature review examines recent scholarly studies on the efficacy of these educational methods, analysing prominent theoretical frameworks such as Ryan and Deci's (2000) self-determination theory and vygotsky's zone of proximal development. It also emphasises empirical evidence that supports the advantages of student-led learning environments.

Furthermore, the quality of peer feedback and the group dynamics in these environments are critical to improving the overall educational experience. Providing high-quality and constructive feedback from peers in AODFs can greatly enhance critical thinking abilities and understanding of the subject (Xie et al., 2008). Nevertheless, it is essential to tackle obstacles such as students' reluctance to give sincere feedback and variations in communication styles due to cultural differences. Yang and Carless (2013) and Yu and Wu (2021) suggest implementing systematic training and using rubrics to achieve this. Efficient group dynamics, which involve positive interdependence, clear communication, and group cohesion, are crucial for achieving successful decision-making and problem-solving in student-led classrooms (Johnson & Johnson, 2009; Forsyth, 2010). This review examines the intricate interaction of these factors, providing insights into the strategies that educators can use to maximise student engagement and enhance learning outcomes in collaborative, student-centred educational settings.

3.1. Student Engagement and Learning Outcomes

Studies have shown that Asynchronous online discussion forums (AODFs) have a substantial positive impact on student engagement and learning outcomes (Hrastinski, 2009). The asynchronous format enables students to engage in the learning process at their preferred speed, resulting in more profound contemplation and more deliberate and considered responses. This review synthesises recent scholarly investigations into student engagement and its impact on learning outcomes, highlighting notable findings and theoretical frameworks. Student engagement is a complex concept that includes various aspects such as behaviour, emotions, and cognition. Student-led classrooms, which prioritise student autonomy, collaboration, and active learning, often result in heightened engagement. Behavioural engagement is defined as active participation in academic activities and strict adherence to classroom rules. Emotional engagement refers to the emotional responses of students, including feelings of interest, boredom, happiness, and anxiety (Fredricks et al., 2004).

Ryan and Deci's (2000) self-determination theory (SDT) states that promoting autonomy, competence, and relatedness in classrooms has a positive impact on intrinsic motivation and engagement. Jang et al. (2010) provide additional evidence to support this claim, demonstrating that students demonstrate increased levels of engagement and enthusiasm when teachers provide autonomy support. Student-led classrooms significantly influence learning outcomes by fostering improved understanding, analytical thinking, and long-term memory retention. Hattie's (2008) meta-analysis revealed that student-led approaches, like cooperative learning and peer tutoring, significantly and positively influence student achievement. Prince (2004) emphasises the efficacy of active learning strategies in classrooms where students take the lead. The focus is on tasks that demand active involvement from students, leading to enhanced comprehension and problem-solving skills. Freeman et al. (2014) have demonstrated that active learning reduces failure rates in STEM subjects, implying that student-led methods enhance learning outcomes across various fields of study.

Constructivist theories, particularly Vygotsky's et al. (1978) work, greatly influence the research on student-led classrooms. The zone of proximal developmentn (ZPD) by Vygotsky emphasises the significance of social interaction and collaborative learning, which are crucial in student-led settings. Engaging in collaborative work with peers and receiving structured support enables students to attain a higher level of comprehension compared to working independently. The community of inquiry (CoI) framework, devised by Garrison et al. (1999), is applicable to classrooms where students take the lead.

The CoI framework posits that cognitive presence, social presence, and teaching presence are essential for meaningful learning experiences. Student-led classrooms foster the development of students' cognitive and social skills, while teachers assume the role of facilitators, providing support for teaching presence in a different manner.

Real-world observations provide empirical evidence that validates the benefits of student-led classrooms. In their study, Dole et al. (2017) discovered that project-based learning, which involves students taking charge, improves both student involvement and academic performance. Kahu and Nelson (2018) emphasized that both individual and contextual factors influence the process of student engagement. They also pointed out that student-led activities have the potential to cater to the diverse needs of students. Kuh (2008) conducted research on educational practices that have a significant effect, such as collaborative assignments and undergraduate research. This research provides additional evidence supporting the effectiveness of classrooms where students take the lead. These practices are associated with enhanced retention, academic achievement, and overall student contentment. To summarise, AODFs (active and open digital feedback systems) and student-led classrooms improve student engagement and learning outcomes by promoting autonomy, collaboration, and active learning. Empirical studies consistently validate these approaches, emphasising their efficacy in various educational environments.

3.2. Quality of Interaction and Peer Feedback

Peer feedback in asynchronous online discussion forums (AODFs) is crucial in student-led classrooms because students are more responsible for their own and their peers' learning. The efficacy of peer feedback in these contexts is vital for cultivating a collaborative and supportive learning milieu. Nevertheless, the literature presents conflicting findings regarding the calibre and influence of peer feedback, emphasising both its potential advantages and inherent difficulties. Xie et al. (2008) study underscores the potential of high-quality, constructive feedback in active online discussion forums (AODFs) to enhance learning outcomes in student-led classrooms. Their research discovered that implementing organised peer feedback mechanisms can enhance critical thinking skills, foster a deeper comprehension of the subject matter, and facilitate the process of reflective learning. In student-led environments, where students frequently assume the role of facilitating discussions and assessing their peers' contributions, the capacity to offer and receive substantial feedback is crucial. Providing constructive feedback serves the purpose of clarifying concepts, correcting misunderstandings, and promoting a more profound involvement with the subject matter. The social presence theory further reinforces the benefits of peer feedback by suggesting that strong interpersonal connections in online forums can enhance learning experiences. When students perceive their peers as supportive and engaged, their likelihood of actively participating and contributing thoughtfully to discussions increases. In student-led classrooms, the presence of a strong community is crucial, as the level of interaction directly impacts the overall quality of the learning experience.

Although the peer feedback process has the potential to be beneficial, multiple studies have identified significant challenges associated with it. In their study, Yu and Wu (2021) highlight the challenges that students commonly encounter when attempting to give feedback that is simultaneously critical and supportive. A significant number of students do not possess the essential abilities to provide constructive criticism without coming across as excessively harsh, resulting in a hesitancy to give sincere feedback. On the other hand, certain students may choose not to provide constructive criticism in order

to preserve positive relationships with their classmates, thus reducing the impact of the feedback process. Several factors, such as students' previous experience, cultural backgrounds, and the explicitness of the feedback criteria, also impact the efficacy of peer feedback. According to Yang and Carless (2013), students who have little experience with peer assessment may feel uncertain or uncomfortable, which can impact their ability to give useful feedback. Cultural differences can further complicate communication styles and the interpretation of feedback.

To address these challenges and enhance the quality of peer feedback in student-led classrooms, we can implement several strategies. Training sessions led by instructors can provide students with the necessary skills to deliver feedback in a proficient manner. Nicol and Macfarlane-Dick (2006) propose that providing explicit guidelines and illustrative instances of effective feedback can enhance students' comprehension of what constitutes constructive feedback. In addition, the use of rubrics for peer assessments can offer a systematic method, guaranteeing that feedback is in line with precise criteria and learning goals. Implementing anonymous feedback mechanisms can effectively mitigate personal biases and foster a culture of candid and constructive feedback. Sluijsmans et al. (1999) discovered that when peer feedback processes are anonymous, it fosters a secure environment for students to freely express their genuine opinions without worrying about harming their relationships with their peers. This approach facilitates the maintenance of a harmonious classroom environment by striking a balance between offering constructive criticism and upholding a supportive atmosphere.

Finally, the quality of peer feedback in AODFs (assessment of and for Learning) within student-led classrooms is critical in shaping the overall learning experience. While providing high-quality and constructive feedback can significantly enhance learning outcomes and foster a collaborative environment, overcoming several obstacles is necessary to maximise its effectiveness. To overcome these challenges, it is beneficial to employ strategies such as conducting training sessions on effective feedback practices, utilising rubrics, and establishing anonymous feedback systems. By improving the quality of peer feedback, student-led classrooms can cultivate a more stimulating and encouraging learning environment that fosters profound comprehension and analytical thinking.

3.3. Group Dynamics and Decision Making

The dynamics of group interaction are critical in student-led classrooms, as they significantly influence the decision-making process and the overall effectiveness of collaborative learning. The literature extensively examines the influence of group dynamics on these processes, with Johnson and Johnson's (2009) studies emphasising the effect of positive interdependence among group members. Positive interdependence fosters a cooperative learning environment, enhancing the quality of decision-making and problem-solving outcomes. The collaborative mindset encourages students to share resources, support each other's efforts, and actively engage with the study material. According to Johnson and Johnson (2009), the concept of shared responsibility enhances both the quality of decision-making and the unity of a group. This is because group members become more dedicated to achieving common goals and desired results.

Efficient communication is an additional crucial element in the decision-making process within student-led classrooms. Regular and transparent communication enables members of a group to exchange different viewpoints, resolve any misunderstandings, and enhance each other's ideas, ultimately enhancing the decision-making process. Bales (1950) highlights the significance of interaction processes in small groups for efficient

decision-making, as they enable the sharing of information and the cultivation of mutual comprehension. Creating an atmosphere that encourages transparent and productive communication is crucial in student-led classrooms, where students frequently take charge of discussions and decision-making independently.

Furthermore, the level of unity within a group has a substantial impact on the process of making decisions in collaborative environments. According to Forsyth (2010), cohesive groups exhibit higher motivation levels in pursuing their objectives and demonstrate superior problem-solving abilities. Motivation and persistence arise from the trust and solidarity that form within cohesive groups. Nevertheless, it is crucial to acknowledge the possible drawbacks of strong group cohesion, such as the occurrence of groupthink. Groupthink, as described by Janis (1972), is a phenomenon in which the group's pursuit of harmony and conformity results in irrational or suboptimal decision-making outcomes. Establishing a setting that appreciates divergent viewpoints and promotes analytical thinking is crucial to reduce this risk. This equilibrium ensures that the unity of the group improves, rather than obstructs, the process of making decisions.

Various strategies can enhance group dynamics and decision-making in student-led classrooms. Training programmes that specifically target teamwork and communication skills can provide students with the essential resources to engage in effective interactions. In addition, creating explicit objectives and assigning specific roles within groups can ensure that every member comprehends their duties and the ways in which they contribute to the overall goal. Furthermore, instructors can enhance the effectiveness of group dynamics by organising team-building activities and offering consistent feedback on the group's performance. Promoting introspective practices, in which group members evaluate their interactions and decision-making processes, can aid in identifying areas for enhancement and reinforcing favourable behaviours.

Ultimately, group dynamics play a crucial role in influencing the decision-making procedures within student-led classrooms. Positive interdependence, efficient communication, and strong group cohesion are crucial elements that contribute to successful outcomes in decision-making and problem-solving. By implementing focused tactics aimed at improving group dynamics, educators can cultivate environments that facilitate efficient collaborative learning and superior decision-making, ultimately resulting in improved educational outcomes for students.

IV. RESEARCH RESULTS AND DISCUSSION

Implementing student-led classrooms has proven to yield substantial advantages in improving student engagement and learning outcomes. Facilitating active learning motivates students to take responsibility for their education, which is one of the main benefits. This approach fosters heightened motivation and enthusiasm for learning, as students experience a greater sense of engagement and personal investment in their educational journey. Hattie's (2008) research suggests that active learning strategies, such as those used in student-led classrooms, have a substantial positive impact on student achievement. These strategies promote a more profound comprehension of the material and enhance critical thinking abilities.

Another critical benefit of student-led classrooms is the cultivation of collaboration and social aptitude. Vygotsky's theory of social interaction emphasises the significance of peer collaboration in the process of cognitive development. Within educational environments driven by students, individuals often collaborate in teams, participate in dialogues, and offer constructive criticism to each other, thereby enhancing their comprehension and problem-solving skills. This collaborative setting not only

facilitates academic development but also equips students for real-life situations where teamwork and communication are crucial.

However, the implementation of student-led classrooms presents a number of challenges. An important concern is the requirement for a well-rounded approach to providing guidance. Research by Kirschner et al. (2006) suggests that minimal guidance may not be as effective for beginner learners who may encounter difficulties without adequate support, despite the importance of autonomy. Educators must strike a balance by offering sufficient structure and guidance to facilitate student success while also granting them the autonomy to independently explore and construct knowledge.

Student-led classrooms often face the challenge of resource allocation. Establishing a conducive atmosphere that promotes dynamic and cooperative learning necessitates substantial dedication and exertion from educators. This encompasses the creation of captivating activities, the facilitation of meaningful discussions, and the provision of prompt feedback. In addition, the requirement for sufficient technological resources to facilitate asynchronous online discussion forums (AODFs) and other interactive tools can put a financial burden on school budgets. To ensure sustainability and effectiveness, the successful implementation of student-led classrooms requires meticulous planning and efficient resource management.

Furthermore, the quality of peer feedback is critical in student-led classrooms, particularly in AODFs. Providing students with the necessary skills to give high-quality, constructive feedback is a difficult task, even though it can greatly improve learning outcomes. It is crucial to train students to provide and receive constructive feedback, as this promotes a supportive learning environment and improves critical thinking skills. Xie et al. (2008) research underscores the potential of structured peer feedback to improve comprehension and foster reflective learning. However, for this to be successful, continuous support and training are necessary.

V. CONCLUSIONS

To summarise, student-led classrooms are a promising method for contemporary education because they promote active learning, collaboration, and critical thinking. The congruence between this educational model and constructivist principles, as advocated by Piaget (1972) and Vygotsky et al. (1978), highlights its capacity to augment student involvement and improve learning results. Nevertheless, the effective execution of student-led classrooms necessitates meticulous deliberation of the obstacles linked to limited guidance and resource allocation. It is crucial to strike a balance between allowing students to work independently and providing them with sufficient assistance to ensure that all students, regardless of their initial skill levels, can derive advantages from this method.

The success of student-led classrooms depends on educators' capacity to efficiently handle these difficulties and exploit the benefits of dynamic, cooperative learning settings. Further investigation and pragmatic advancements in pedagogical approaches will be critical in refining this educational framework and optimising its capacity. By acknowledging the inherent difficulties and capitalising on the advantages of student-led classrooms, educators can establish enriching learning opportunities that equip students for success in both academic and real-life situations.

REFERENCES

Bales, R. F. (1950). *Interaction process analysis: A method for the study of small groups*. Boston, MA, US: Addison-Wesley Press.

Barrows, H. S. (1996). Problem-based learning in medicine and beyond: A brief overview. *New Directions for Teaching & Learning*, *68*, 3-12. https://doi.org/10.1002/tl.37219966804.

Brown, J. S., Collins, A., & Duguid, P. (1989, January-February). Situated cognition and the culture of learning. *Educational Researcher*, *18*(1), 32-42. https://doi.org/10.3102/0013189X018001032.

Bruner, J. S. (1966). *Toward a theory of instruction*. Cambridge, MA: Harvard University Press.

Dole, S., Bloom, L., & Doss, K. K. (2017, September). Engaged learning: Impact of PBL and PjBL with elementary and middle grade students. *The Interdisciplinary Journal of Problem-Based Learning*, *11*(2), 1-11. https://doi.org/10.7771/1541-5015.1685.

Forsyth, D. R. (2010). *Group dynamics* (5th ed.). Belmont, CA: Wadsworth Cengage Learning.

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, *74*(1), 59-109. https://doi.org/10.3102/00346543074001059.

Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). *Active learning increases student performance in science, engineering, and mathematics* (*111*(23), pp. 8410-8415). Paper presented at the National Academy of Sciences of the United States of America. https://doi.org/10.1073/pnas.1319030111.

Garrison, D., Anderson, T., & Archer, W. (1999). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education*, *2*(2-3), 87-105. https://doi.org/10.1016/s1096-7516(00)00016-6.

Hattie, J. A. C. (2008). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. London: Routledge. https://minerva-access.unimelb.edu.au/bitstream/11343/31622/1/281182_161493.pdf

Hofstein, A., & Lunetta, V. N. (2004). The laboratory in science education: Foundations for the twenty-first century. *Science Education*, *88*(1), 28-54. https://doi.org/10.1002/sce.10106.

Jang, H., Reeve, J., & Deci, E. L. (2010). Engaging students in learning activities: It is not autonomy support or structure but autonomy support and structure. *Journal of Educational Psychology*, *102*(3), 588-600. https://doi.org/10.1037/a0019682.

Janis, I. L. (1972). *Victims of groupthink: A psychological study of foreign-policy decisions and fiascoes*. Boston, 125 High St, United States: Houghton Mifflin.

Johnson, D. W., & Johnson, R. T. (2009). An educational psychology success story: Social interdependence theory and cooperative learning. *Educational Researcher*, *38*(5), 365-379. https://doi.org/10.3102/0013189X09339057.

Kahu, E. R., & Nelson, K. (2017). Student engagement in the educational interface: Understanding the mechanisms of student success. *Higher Education Research & Development*, *37*(1), 58-71. https://doi.org/10.1080/07294360.2017.1344197.

Kirschner, P. A., Sweller, J., & Clark, R. E. (2006). Why minimal guidance during instruction does not work: An analysis of the failure of constructivist, discovery, problem-based, experiential, and inquiry-based teaching. *Educational Psychologist*, *41*(2), 75-86. https://doi.org/10.1207/s15326985ep4102_1.

Kuh, G. D. (2008). *High-impact educational practices: What they are, who has access to them, and why they matter*. Report from the Association of American Colleges & Universities.

Nicol, D. J., & Macfarlane-Dick, D. (2006). Formative assessment and self-regulated learning: A model and seven principles of good feedback practice. *Studies in Higher Education*, *31*(2), 199-218. http://dx.doi.org/10.1080/03075070600572090.

Piaget, J. (1972). *The psychology of the child*. New York: Basic Books.

Prince, M. (2004). Does active learning work? A review of the research. *Journal of Engineering Education*, *93*(3), 223-231. https://doi.org/10.1002/j.2168-9830.2004.tb00809.x.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68-78. https://doi.org/10.1037/0003-066X.55.1.68.

Sluijsmans, D. M. A., Dochy, F. J. R. C., & Moerkerke, G. (1999). Creating a learning environment by using self-, peer- and co-assessment. *Learning Environments Research*, *1*(3), 293-319. https://doi.org/10.1023/A:1009932704458.

Vygotsky, L. S., Cole, M., Jolm-Steiner, V., Scribner, S., & Souberman, E. (1978). *Mind in society: Development of higher psychological processes*. Harvard University Press. https://www.jstor.org/stable/j.ctvjf9vz4.

Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem solving. *Child Psychology & Psychiatry & Allied Disciplines*, *17*(2), 89-100. https://doi.org/10.1111/j.1469-7610.1976.tb00381.x.

Xie, K., Ke, F., & Sharma, P. (2008). The effect of peer feedback for blogging on college students' reflective learning processes. *The Internet & Higher Education*, *11*(1), 18-25. https://doi.org/10.1016/j.iheduc.2007.11.001.

Yang, M., & Carless, D. (2013). The feedback triangle and the enhancement of dialogic feedback processes. *Teaching in Higher Education*, *18*(3), 285-297. https://doi.org/10.1080/13562517.2012.719154.

Yu, F. -Y., & Wu, C. -P. (2021). Predictive effects of socio-cognitive and affective variables on learning outcomes in online peer feedback settings. *Educational Technology Research & Development*, *69*(2), 1235-1253.