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CHAPTER 3

SOCIALLY ADAPTIVE LEARNING:

GROWING DISCIPLINE IN STUDENT LEARNING AFTER THE COVID-19 PANDEMIC

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ABSTRACT

This paper describes the application of socially adaptive learning to improve student learning discipline after the pandemic. Socially adaptive learning (SAL) is a learning approach that aims to enhance students' learning outcomes and social skills by adapting content and learning strategies tailored to their characteristics and social environment. Motivation, interest, self-confidence, and social support can influence student learning discipline in this context. The optimal application of Socially adaptive learning can positively impact student learning discipline by increasing learning motivation and helping reduce undisciplined behaviour, such as arriving late to school and leaving class without permission.

KEYWORDS: Socially adaptive learning; Student learning discipline; After the covid-19 pandemic

INTRODUCTION

After the COVID-19 pandemic, many students experienced a decline in study discipline due to various factors that affected the learning situation, such as the transition to distance learning, changes in routines, and the stress caused by the pandemic. Several things cause this 1) The transition to distance learning can make students feel less organized and disciplined in learning activities. Distance learning allows students to have more flexibility in their study time, but at the same time, this can create problems in time management and learning consistency. 2) changes in routine caused by the COVID-19 pandemic can affect student learning discipline. Many students are used to regular study schedules at school and suddenly have to adapt to different study patterns at

home. This can interfere with the consistency and focus of students in learning activities. 3) The stress caused by the COVID-19 pandemic can also affect student learning discipline. Stress caused by lifestyle changes, uncertainty, and social isolation can impair students' mental health and affect their ability to focus on learning activities.

According to a study by UNESCO, the COVID-19 pandemic has caused a worldwide decline in student learning discipline. The study found that "many students reported difficulties motivating themselves to study, managing their time well, and maintaining consistency in study activities (UNESCO., 2020). The research results of Shao, Y. et al. (Shao, Y.; Ranganathan, S.; Ganapathy, H., & Bommakanti, 2021) show that the COVID-19 pandemic is having an impact on student well-being and learning in K-12 schools. The results of this study indicate that students need help motivating themselves to study independently, manage their time well, and maintain consistency in learning activities. Meanwhile, (Sahu, 2020) found that the COVID-19 pandemic impacted students' and academic staff's education and mental health. The results of this study indicate that students need help motivating themselves to study independently, managing time well, and maintaining consistency in learning activities, which decreases learning discipline. In addition, the stress and anxiety caused by the pandemic can interfere with students' concentration and learning motivation, which results in a decrease in learning discipline (Kumar, A.; Nayar, U., & Koya, 2020)

Some research results above show that the COVID-19 pandemic has affected student discipline worldwide at the K-12 and tertiary levels. This is caused by changes in lifestyle and learning situations that are unstable and uncertain, which affect students' motivation, concentration, and consistency of learning. Socially adaptive learning (SAL) is a learning concept that combines technology and social interaction to increase the effectiveness of student learning. In the post-COVID-19 pandemic, online learning has become the

norm in many countries, and students face new challenges in their study disciplines. Socially adaptive learning helps students learn in a more organized and disciplined way so that they can achieve better results.

One of the reasons why socially adaptive learning is essential in improving student learning discipline after the COVID-19 pandemic is that students often have difficulty motivating themselves and maintaining their focus during online learning. With technology that supports social interaction, such as online discussion forums, collaborative learning platforms, and the use of social media in educational contexts, students can engage in learning more actively and take responsibility for their learning outcomes. Social interaction can also help students feel more connected to their classmates and teachers, motivating them to keep learning.

According to a study by the University of Maryland, social interaction in online learning can help increase student motivation and engagement. The study found that "when students feel more connected to their classmates and teachers online, they tend to be more eager to learn and develop the social and cognitive skills necessary for success in the digital age (Zhang, 2015).

LITERATURE REVIEW

Internal and external factors can influence student learning discipline, so developing a learning environment that supports and builds practical learning skills is necessary. Internal factors such as motivation and interest, as well as external factors such as the learning environment and parental support, to improve student learning and discipline must build a positive learning environment and motivate students to learn (Daryanto., 2019)(Raharjo, 2016). High students, education, and profession will improve their learning achievement (Sari, 2018). Several research results show that the COVID-19 pandemic has significantly affected student learning discipline, which decreased after the COVID-19 pandemic (Adisti, F., & Nastiti, 2021) (Zuhdi,

M.; Sari, S.M., & Handayani, 2021) (Puspitasari, 2021). Factors that cause a decrease in learning discipline are due to ineffective learning online, lack of social interaction between students and teachers, and health anxiety (Kurniasih, N.; Rahmawati, D., & Afriyanti, 2021).

Several learning models, such as Problem-Based Learning and Cooperative Learning, have been implemented in schools to increase student learning motivation and discipline. Some research states that the learning model will influence student learning discipline (Anggraini, N., & Syamsuddin, 2020) (Putra, A. G., & Kartono, 2019).

History of the Emergence of Adaptive Learning

Socially adaptive learning is a learning approach that integrates social interaction and adaptation in the learning process. This approach aims to increase learning effectiveness through interaction between students and their learning environment. The history of why socially adaptive learning emerged can be traced back to the early 2000s when the emergence of computer-based learning approaches called intelligent tutoring systems (ITSs). ITSs provide individual learning experiences tailored to students' needs and abilities. However, at the same time, researchers are beginning to recognize the importance of social interaction in learning and its impact on students' motivation and academic achievement (J. C. Lester et al. l, 2016).

Socially Adaptive Learning Goals

Socially Adaptive Learning aims to enable social interaction between students and their learning environment, thus increasing learning effectiveness and helping students achieve their learning goals. This approach also seeks to optimize the use of artificial intelligence (AI) to provide learning experiences tailored to students' needs and abilities (S. D. Hammond et al. l, 2009).

RESULTS AND DISCUSSION

The Socially Adaptive Learning model is suitable for school application (Why must it be Socially Adaptive Learning?)

The Socially Adaptive Learning (SAL) learning model is suitable for application in schools today because it provides a more personal and adaptive learning experience for each student and improves social skills that are important in everyday life. Several reasons why the SAL model is suitable to be applied in schools today are:

a. Distance Learning Challenges

   The SAL model facilitates remote learning by providing a more interactive and personalized learning experience for each student, even if they are not in the same classroom.

b. Addressing Student Differences

   Every student has different needs and learning styles. The SAL model pays attention to individual student differences and provides learning experiences suitable for each student to improve learning outcomes.

c. Improve Social Skills

   The SAL model facilitates social interaction between students and pays attention to students' social skills in the learning process, such as cooperation, communication, and interpersonal skills. These social skills are essential in everyday life and can help students in various situations (Hammond, S. D., & Crosson, 2018b) (Chen, B., & Bryer, 2012).

Socially Adaptive Learning is a learning approach that integrates social interaction and adaptation in the learning process. This approach aims to increase learning effectiveness through interaction between students and their learning environment. The features of this approach include using artificial intelligence (AI) to provide learning experiences that are tailored to the needs and abilities of students, increasing social interaction between students and their learning environment to help them achieve their learning goals, and using the

data obtained. of social interaction and student performance to improve the learning experience (C. Conati et al. l, 2014).

Socially Adaptive Learning has several characteristics; the following is an explanation and reference for each of these characteristics:

a. Personalized learning: Socially Adaptive Learning integrates social interaction with artificial intelligence technologies to create personalized learning experiences tailored to the needs of each student (Hammond, S. D., & Crosson, 2018b).

b. Rich social interactions: Socially Adaptive Learning emphasizes rich social interactions between students and their learning environment. This can include interactions with teachers, classmates, and virtual learning environments (C. Conati et al. l, 2014)

c. Adaptive learning: Socially Adaptive Learning enables adapted learning experiences for students based on information about students' learning profiles and progress in the learning process (Hammond, S. D., & Crosson, 2018a).

d. Increased motivation: Socially Adaptive Learning can increase student motivation by providing personalized, engaging, and relevant feedback and creating a more enjoyable learning experience (J. C. Lester et al. l, 2016).

e. Ability to develop social skills: Socially Adaptive Learning can help students develop social skills such as cooperation, communication, and leadership through social interactions in the learning environment (J. C. Lester et al. l, 2016).

By implementing socially adaptive learning, students can improve their learning abilities. However, there are several weaknesses besides the advantages of Socially Adaptive Learning.

Advantages and Weaknesses of Socially Adaptive Learning

Socially Adaptive Learning has several advantages and disadvantages; the following is an explanation and reference for each of these aspects:

Superiority:

1. Personalized learning: Socially Adaptive Learning can result in learning experiences that are more personalized and tailored to individual needs. This can increase the effectiveness of learning and accelerate student progress (Hammond, S. D., & Crosson, 2018b).
2. Motivation: Socially Adaptive Learning can increase students' motivation to learn by providing exciting and relevant feedback and creating a more enjoyable learning experience (J. C. Lester et al. l, 2016)
3. Collaborative learning: Socially Adaptive Learning can facilitate social interaction, increase student engagement in education and help develop critical social skills (Dillenbourg, P.; Jarvela, S.; Fischer, 2009).

Weakness:

1. Requires complex technology: Socially Adaptive Learning requires complex technology to capture data about learning and produce personalized learning experiences. This can require significant investments in technology infrastructure and skilled human resources (Dillenbourg, P.; Jarvela, S.; Fischer, 2009).
2. Limitations in recognizing and meeting individual needs: Socially Adaptive Learning still has limitations in identifying and meeting individual student needs, especially if the data about student profiles must be completed or accurate (Hammond, S. D., & Crosson, 2018a).
3. Potential to increase social inequalities: Socially Adaptive Learning can amplify social inequalities when personalized learning experiences are only available to students who can afford them (Dillenbourg, P.; Jarvela, S.; Fischer, 2009).

It is necessary to recognize the learning steps to make the socially adaptive learning model effective and improve student learning discipline.

Learning Steps with the Socially Adaptive Learning Model

Socially Adaptive Learning is a learning approach that pays attention to social aspects and individualization of learning. Here are some learning steps using Socially Adaptive Learning:

1. Collect student profile data: Collect student profile data to understand student learning characteristics and preferences. This data can include learning preferences, multiple intelligences, learning styles, initial abilities, interests, etc. (Roll, I., Baker, R. S., Aleven, V., McLaren, B. M., & Koedinger, 2005).
2. Generate student profile models: Use student profile data to generate student profile models that can be used to create personalized learning experiences tailored to student needs and preferences (Roll, I., Baker, R. S., Aleven, V., McLaren, B. M., & Koedinger, 2005).
3. Developing personalized learning experiences: Using student profile models to develop customized learning experiences. These learning experiences include learning content, strategies, feedback, etc. (Roll, I., Baker, R. S., Aleven, V., McLaren, B. M., & Koedinger, 2005).
4. Implement adaptive feedback: Provide adaptive feedback tailored to student needs and preferences. This feedback can include measuring student progress, positive reinforcement, and suggestions for improving understanding or skills(Hammond, S. D., & Crosson, 2018a).
5. Encouraging collaboration: Encouraging students to work together and interact with other students, either in person or through technology. This collaboration can increase student engagement in learning and help them develop social skills (Dillenbourg, P.; Jarvela, S.; Fischer, 2009).

Similarities and Differences between the Socially Adaptive Learning Model and the Adaptive Learning Model

Socially Adaptive Learning (SAL) and Adaptive Learning (AL) are two learning models with similarities and differences. The similarities are, 1) both are learning models that pay attention to the individualization of learning and learning experiences tailored to students' needs and preferences. 2) both use technology and algorithms to produce personalized and adaptive learning experiences, and 3) aim to increase the effectiveness and efficiency of learning by considering students' characteristics (Hammond, S. D., & Crosson, 2018a).

Table 1: Differences between the Socially Adaptive Learning Model and Adaptive Learning Model (Brusilovsky, P., & Peylo, 2003)

Parameter	**Socially Adaptive Learning Model**	**Adaptive Learning Model**
Focus	SAL pays more attention to the social aspects of learning	AL focuses on individualizing learning based on a student's abilities and preferences.
Data	SAL uses student profile data and social interaction to generate learning models,	AL uses student profile data and measurements of student progress to produce personalized learning experiences.
Algorithm	SAL uses an algorithm that pays attention to social aspects, such as social network analysis	AL uses algorithms focusing more on individual adaptation, such as reinforcement learning.
Objective	SAL aims to improve social interaction and social skills of students, meanwhile	SAL aims to improve social interaction and social skills of students, meanwhile

Differences in Learning Socially Adaptive Learning with Conventional Learning

The main difference between Socially Adaptive Learning (SAL) and conventional learning lies in the approach and objectives. The following is a more detailed explanation of the differences between the two learning models:

Table 2: Differences in Learning Socially Adaptive Learning with Conventional Learning

Parameter	Socially Adaptive Learning	conventional
Approach	SAL uses technology and algorithms to pay attention to individual student differences and provide a personalized and adaptive learning experience.	Generally, use the same teaching method for all students, regardless of individual student differences.
Objective	The objectives of the SAL are more focused on developing students' social skills, such as collaboration, communication, and interpersonal skills, while also paying attention to academic aspects.	Conventional learning objectives focus more on transferring knowledge or information from teacher to student and pay more attention to academic aspects such as knowledge and skills.
Social interaction	SAL pays more attention to social interaction and student collaboration and uses social interaction data to produce more personalized learning experiences.	Conventional learning is more likely to be individual, students do their work, and interaction with classmates is limited.
Use of Technology	SAL uses advanced technology, such as artificial intelligence and machine learning, to pay attention to individual student differences and provide personalized learning experiences	Conventional learning uses limited technology, such as books and blackboards.

Socially Adaptive Learning Relationship with Student Learning Discipline

Socially adaptive learning (SAL) is an approach that aims to improve student's learning outcomes and social skills by adapting content and learning strategies tailored to their characteristics and social environment. Motivation,

interest, self-confidence, and social support can influence student learning discipline in this context. Several studies have shown that the application of SAL can positively impact student learning discipline. For example, a study conducted by Chen et al. High school students in Taiwan found that implementing SAL can increase student motivation and help reduce undisciplined behaviour, such as arriving late to school and leaving class without permission (Chen, B., & Bryer, 2012)

CONCLUSION

1. The COVID-19 pandemic has caused a worldwide decline in student learning discipline; a learning model is needed to build student learning discipline after the pandemic. Socially adaptive learning is a learning model with the advantage of personalizing, motivating and collaborative learning.
2. Socially adaptive learning allows students to learn in a supportive and adaptive environment, increasing motivation to help them build practical study skills and improve their learning discipline.

REFERENCE

Adisti, F., & Nastiti, D. . (2021). Dampak pandemi Covid-19 terhadap disiplin belajar siswa di Indonesia. *Jurnal Pendidikan Dan Kebudayaan.*, *27*(2), 211–221.

Akhtar, S., Arif, A., Rubi, E., & Naveed, S. (2011). Impact of Organizational Learning on Organizational Performance: Study of Higher Education Institutes. *International Journal of Academic Research*, *3*(5), 327–331. http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=69735486&site=ehost-live

Akwaowo, R. R., & Kalio, T.-I. S. (2021). Organizational Learning and Learning Organization: A Review of Theories. *International Journal of Research and Innovation in Social Science*, *V*(Viii), 562–575. www.rsisinternational.org

Anggraini, N., & Syamsuddin, A. (2020). Pengaruh Model Pembelajaran Problem Based Learning Terhadap Disiplin Belajar Siswa. *Jurnal Pendidikan: Teori, Penelitian, Dan Pengembangan.*, *5*(5), 686-693.

Argote, L., & Miron-Spektor, E. (2011). Organizational learning: From knowledge experience. *Organization Science*, *22*(5), 1123–1137. https://doi.org/10.1287/orsc.1100.0621

Baeten, M., Struyven, K., & Dochy, F. (2013). Student-centred teaching methods: Can they optimize students' approaches to learning in professional higher education? *Studies in Educational Evaluation*. https://www.sciencedirect.com/science/article/pii/S0191491X1200048X

Barret, T. (2017). A New Model of Problem-Based Learning: Inspiring Concepts, Practice Strategies and Case Studies from Higher Education. In *The British Journal of Psychiatry*.

Bartscht, J. (2015). Why systems must explore the unknown to survive in VUCA environments. *Kybernetes*, *44*(2), 253–270. https://doi.org/10.1108/K-09-2014-0189

Bennett, N., & Lemoine, G. J. (2014). What a difference a word makes: Understanding threats to performance in a VUCA world. *Business Horizons*, *57*(3), 311–317. https://doi.org/10.1016/j.bushor.2014.01.001

Bratianu, C. (2015). Organizational Learning and the Learning Organization. *Constantin Bratianu Bucharest Academy of Economic Studies*, *January*, 286–312. https://doi.org/10.4018/978-1-4666-8318-1.ch012

Brusilovsky, P., & Peylo, C. (2003). Adaptive and intelligent web-based educational systems. *International Journal of Artificial Intelligence in Education*, *13*(2–4), 159–172.

C. Conati et al. (2014). Intelligent tutoring systems with conversational dialogue. *AI Magazine*, *35*(4), 18–34.

Carolyn Rhodes Teacher. (2019). The future of education. *Nature*, *97*(2438), 417–418. https://doi.org/10.1038/097417a0

Casey, G. W. (2014). Leading in a "VUCA" world. *Fortune*, *169*(5), 75–76. https://doi.org/10.12725/ujbm.54.5

Chang, S. E., & Lin, C. S. (2007). Exploring organizational culture for information security management. In *Industrial Management and Data Systems* (Vol. 107, Issue 3). https://doi.org/10.1108/02635570710734316

Chen, B., & Bryer, T. (2012). Investigating instructional strategies for using social media in formal and informal learning. *The International Review of Research in Open and Distributed Learning*, *13*(1), 87–104.

Chen, W. T., Wang, C. W., Lu, S. T., & Pan, N.-H. (2018). The Impact of Safety Culture on Safety Performance : a Construction Company Case Study. *International Journal Of Organizational Innovation*, *11*(1), 1–16.

Cousins, B. (2018). Design Thinking : Organizational Learning In Vuca Environments. *Academy of Strategic Management Journal*, *17*(2), 1–18.

Daryanto. (2019). *Disiplin Belajar Siswa*. Rajawali Press.

Denti. (2016). *Proactive Teaching and Empowering Students*. 5–13.

Dillenbourg, P.; Jarvela, S.; Fischer, F. (2009). *The evolution of research on computer-supported collaborative learning: from design to orchestration* (S. Balacheff, N. ; Ludvigsen, S. ; De Jong, T. ; Lazonder, A. ; Barnes (ed.)). Dordrecht, Springer. https://doi.org/https://doi.org/10.1007/978-1-4020-9827-7_1

Dinda, S., & Roy, A. (2021). Role of Socially Adaptive Learning Platform in

Enhancing Student Engagement and Achievement in Remote Learning. *Education and Information Technologies.*, *26*(5), 5375-5395.

Fawaid, M., Ramdani, S. D., & Nurtanto, M. (2016). Kajian Pengembangan Green School Di Pendidikan Kejuruan Di Banten. *Seminar Nasional Dan Pameran Produk Pendidikan Vokasi*, *1*, 416–421. https://jurnal.uns.ac.id/uvd/article/view/7202

Geleta, A., & Tafesse, M. (2017). Schools as learning organizations: assessing the organizational learning practices in West Oromia Secondary Schools of Ethiopia. *Ethiopian Journal of Education and Sciences*, *12*(2).

Georgiou, K., Gouras, A., & Nikolaou, I. (2019). Gamification in employee selection: The development of a gamified assessment. *... Journal of Selection and ...*. https://onlinelibrary.wiley.com/doi/abs/10.1111/ijsa.12240

Hammond, S. D., & Crosson, A. C. (2018a). *Intelligent tutoring systems with conversational dialogue*. Elsevier.

Hammond, S. D., & Crosson, A. C. (2018b). *Socially adaptive learning. In Learning Science: Theory, Research, and Practice*. Elsevier.

Hutchins, E. (2020). Organizational Learning. *Cognition in the Wild*, 713–719. https://doi.org/10.7551/mitpress/1881.003.0010

J. C. Lester et all. (2016). Developing social competencies for life success: From case studies to the design of socially adaptive learning. *Educational Technology Research and Development*, *64*(3),. 395-416.

Kanwal, E., Nawaz, W., Ali Nisar, Q., & Azeem, M. (2017). Does Organization Learning Capacity Influence the Organization's Effectiveness? Moderating Role of Absorptive Capacity. *International Journal of Engineering and Information Systems*, *1*(1), 28–35.

Kolb, D. A., Boyatzis, R. E., & Mainemelis, C. (2014). Experiential learning theory: Previous research and new directions. *Perspectives on Thinking, Learning, and Cognitive Styles*, *216*, 227–247. https://doi.org/10.4324/9781410605986-9

Kumar, A.; Nayar, U., & Koya, S. F. (2020). Impact of COVID-19 on the Mental Health of Children and Adolescents. *Cureus*, *12*(9). https://doi.org/10.7759/cureus.10051

Kurniasih, N.; Rahmawati, D., & Afriyanti, D. (2021). Dampak Pandemi COVID-19 terhadap Motivasi Belajar dan Disiplin Belajar Siswa Sekolah Menengah Atas. *Jurnal Pendidikan: Teori, Penelitian, Dan Pengembangan.*, *6*(6), 794–800.

Liu, H.; Kang, J., & Wang, H. (2020). Socially adaptive learning and students' academic performance: Evidence from China. *International Journal of Educational Research.*, *102*.

Liu, S., Chai, H., Liu, Z., Pinkwart, N., Han, X., & Hu, T. (2019). Effects of proactive personality and social centrality on learning performance in SPOCs. *CSEDU 2019 - Proceedings of the 11th International Conference on Computer Supported Education*, *2*(May), 481–487.

https://doi.org/10.5220/0007756604810487

Nandram, S. S., & Bindlish, P. K. (2017). *Managing VUCA Through Integrative Self- Management* (Nyenrode Business Universiteit Breukelen The Netherlands (ed.); 1st ed.). Faculty of Management Studies—WISDOM Banasthali Vidyapith Jaipur, Rajasthan, India. https://doi.org/10.1007/978-3-319-52231-9

Obrenovic, B., Obrenovic, S., & Hudaykulov, A. (2015). The value of knowledge sharing: impact of implicit and explicit knowledge sharing on team performance of scientists. *The International Journal of Management Science and Business Administration*, *1*(2), 33–52. https://doi.org/10.18775/ijmsba.1849-5664-5419.2014.12.1003

Puspitasari, A. R. (2021). Dampak pandemi Covid-19 terhadap disiplin belajar siswa di Indonesia: Studi kasus di SMA Negeri 2 Klaten. *Jurnal Pendidikan Sains Dan Teknologi.*, *5*(1), 28–35.

Putra, A. G., & Kartono, K. (2019). Pengaruh Model Pembelajaran Kooperatif Tipe NHT (Numbered Heads Together) Terhadap Disiplin Belajar Siswa Kelas XI SMK. *Jurnal Administrasi Pendidikan.*, *5*(2), 180-190.

Raghuramapatruni, R., & Shanmukha Rao Kosuri, M. (2017). The Straits of Success in a VUCA World. *IOSR Journal of Business and Management*, 2319–7668. www.iosrjournals.org

Raharjo. (2016). Disiplin Belajar Siswa. *Jurnal Pendidikan Dan Kebudayaan.*, *22*(4), 423–432.

Rasheed, I., & Ibrahim, M. (2015). Knowledge management as a strategy and competitive advantage : A strong influence to success, a survey of knowledge management case studies of different organizations. *Information and Knowledge Management*, *5*(8), 60–72.

Roll, I., Baker, R. S., Aleven, V., McLaren, B. M., & Koedinger, K. R. (2005). User models for adaptive hypermedia and adaptive educational systems. *User Modeling- Springer Berlin Heidelberg*, *4321*, 367–376.

S. D. Hammond et al. (2009). Socially adaptive technologies in education. *Educational Technology Magazine*, *49*(3), 13–20.

Saadat, V., & Saadat, Z. (2016). Organizational Learning as a Key Role of Organizational Success. *Procedia - Social and Behavioral Sciences*, *230*, 219–225. https://doi.org/10.1016/j.sbspro.2016.09.028

Samarakoon, S.; Fernando, T., & Hume, M. (2018). Effectiveness of socially adaptive e-learning in improving students' learning outcomes. *Journal of Computing in Higher Education.*, *30*(1), 130-151.

Shao, Y.; Ranganathan, S.; Ganapathy, H., & Bommakanti, K. (2021). Impact of COVID-19 on Student Learning and Well-being in K-12 Schools: A Systematic Review. *Journal of Education for Students Placed at Risk (JESPAR)*, *26*(1–2), 84–116.

Swisher, V. V. (2004). *FYI for learning agility : a must-have resource for high-potential development*. FYI® For Learning Agility.

UNESCO. (2020). *COVID-19 impact on education*.

Vasilchenko, A., Li, J., Ryskeldiev, B., Sarcar, S., Ochiai, Y., Kunze, K., & Radu, I. (2020). Collaborative learning & co-creation in XR. *Conference on Human Factors in Computing Systems - Proceedings*, 1–4. https://doi.org/10.1145/3334480.3381056

Wang, Z., & Wang, N. (2012). Knowledge sharing, innovation, and firm performance. *Expert Systems with Applications*, *39*(10), 8899–8908. https://doi.org/10.1016/j.eswa.2012.02.017

Yeung, A. C. L., Lai, K. H., & Yee, R. W. Y. (2007). Organizational learning, innovativeness, and organizational performance: A qualitative investigation. *International Journal of Production Research*, *45*(11), 2459–2477. https://doi.org/10.1080/00207540601020460

Yuan, A., & Chayanuvat, A. (2021). A Study on the Difference between Organizational Learning And Learning Organization. *International Journal of Arts and Social Science*, *4*(4), 77–81.

Zgrzywa-Ziemak, A. (2015). The Impact of Organizational Learning on Organizational Performance. *Management and Business Administration. Central Europe*, *23*(4), 98–112. https://doi.org/10.7206/mba.ce.2084-3356.159

Zhang. (2015). Socially adaptive learning in online higher education: A potential approach to improve student outcomes. *Online Learning*, *19*(3), 1–10.

Zuhdi, M.; Sari, S.M., & Handayani, D. . (2021). Dampak pandemi Covid-19 terhadap motivasi dan disiplin belajar siswa di Indonesia. *Jurnal Ilmiah Pendidikan Fisika Dan Teknologi.*, *7*(2), 39–49.

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