An In-Depth Literature Review of Remote, Online, and Hybrid Learning with Case Studies of Successful and Failed Attempts

Rusen Meylani (iD)
Istanbul Aydin University, Turkiye

To cite this article:

An In-Depth Literature Review of Remote, Online, and Hybrid Learning with Case Studies of Successful and Failed Attempts

Rusen Meylani

Article Info

Abstract

This literature review traces the historical development and changing educational delivery modalities to examine the evolution, application, and effects of remote, online, and hybrid learning models. It offers a theoretical framework outlining important educational ideas and techniques, concentrating on how different learning styles are considered within these paradigms and their difficulties and advantages. The paper emphasizes how significant technology developments have influenced remote learning, especially when combining synchronous and asynchronous learning techniques in hybrid models. Effective course design, learner engagement, technology infrastructure, faculty training, and institutional support are all factors that contribute to successful implementation. The study also contains case studies demonstrating successful and failed implementation initiatives, emphasizing the techniques, instructional approaches, technological integrations employed, and results and outcomes obtained. The analysis suggests best practices and suggestions for educators, institutions, and legislators to improve the effective implementation of various learning models, address possible issues, and offer enough faculty and student support. This thorough literature analysis provides insights into the dynamic interaction between pedagogy, technology, and institutional support in distant, online, and hybrid learning, serving as a significant resource in education and learning.

Introduction

Background and Significance of Remote, Online, and Hybrid Learning

With the development of technology and the COVID-19 pandemic, remote, online, and hybrid learning have become increasingly common in education (Picciano, 2017). Because of the adaptability and accessibility of these learning models, learners participate in educational activities from a distance (Kao et al., 2023). The importance of remote, online, and hybrid learning is found in their capacity to go over limitations of time and location, opening up options for lifelong learning and increasing access to education for a wide range of people (Barone, 2022).

Purpose of the Literature Review

This literature review investigates the development, application, and effects of hybrid, online, and remote learning

models. This study seeks to provide a thorough grasp of the pedagogical methods, difficulties, advantages, and best practices connected with these learning models by looking at previous research and case studies (Picciano, 2017; Parker et al., 2021; Barone, 2022). The review distinguishes between successful and failed implementation efforts by emphasizing the tactics, instructional methods, technological integrations employed, and outcomes and results (Parker et al., 2021; Kao et al., 2023).

Research Questions and Objectives

The following are the goals and research topics for this literature review:

1. What theoretical foundations and instructional strategies are used in online, blended, and remote learning?
2. How can hybrid, online, and remote learning models support various preferences?
3. What are the drawbacks and advantages of distance, online, and hybrid learning?
4. What elements help remote, online, and hybrid learning to be successfully implemented?
5. What are the best methods and advice for politicians, institutions, and educators to ensure that these learning models are implemented successfully?
6. What remote, online, and hybrid learning implementation examples have been successful and unsuccessful?
7. How do pedagogical techniques and technological integrations affect remote, online, and hybrid learning results?
8. How do online, blended, and distant learning affect the area of education and learning?

This literature review intends to provide insightful information on the dynamic interaction between pedagogy, technology, and institutional support in remote, online, and hybrid learning by addressing these study issues and goals (Barone, 2022). The research results help educators, organizations, and legislators improve the application of these learning models, mitigate possible problems, and provide staff and students with the assistance they need (Barone, 2022).

Evolution and Implementation of Remote, Online, and Hybrid Learning

Historical Development of Distance Education

Distance learning has a long history from the 19th century when students received print-based course materials over the mail (Kang, 2021). With this early kind of distance education, people access instructional materials without being present in a conventional classroom (Kang, 2021). With the development of technology, distance education has changed over time, resulting in the establishment of remote, online, and hybrid learning models (Kang, 2021).

Shifting Educational Delivery Modes

With the popularity of remote, online, and hybrid learning, education delivery has changed substantially (Kang,

2021). Due to the expanding accessibility and availability of technology, these means of distribution have grown increasingly common (A'yun et al., 2022). By using digital platforms to offer education, remote learning enables students to access course materials anywhere (Kang, 2021). Conversely, online learning refers to delivering education exclusively via online platforms, doing away with the need for physical attendance in a classroom (Kang, 2021). A flexible and blended learning environment is produced via hybrid learning, which includes features of both in-person and online training (Kang, 2021).

Technological Advancements in Remote Learning

Technological breakthroughs have significantly shaped remote learning models. The transmission of educational information in distant locations has been eased by integrating multiple technologies, such as learning management systems, video conferencing tools, and online collaboration platforms (A'yun et al., 2022). With the help of these developments, synchronous and asynchronous learning is now possible, enabling students to connect with teachers and other students in real-time and access recorded lectures and course materials at their leisure (Picciano, 2017). Personalized and adaptable learning experiences tailored to learners' unique requirements and preferences are now possible thanks to technology in remote learning (Marcynuk et al., 2022).

Theoretical Framework and Pedagogical Approaches

Theories and Frameworks for Online Education

Numerous theoretical frameworks and models that support online education provide direction for the creation and execution of successful online learning experiences. The Multimodal Model for Online Education, put out by (Picciano, 2017), is one such framework. This framework for online education is created by integrating many pedagogical ideas and theories of learning. It highlights the need to combine multiple modes of education, such as synchronous and asynchronous learning, multimedia materials, and interactive activities. It considers learners' varying requirements and preferences (Picciano, 2017).

Accommodating Learning Styles in Remote, Online, and Hybrid Learning

One of the most critical components of remote, online, and hybrid learning is accommodating various learning styles. When developing and delivering online teaching, educators must consider that each learner has different preferences and methods for processing information (Picciano, 2017). Visual, auditory, and kinesthetic learners benefit from multimedia materials, including movies, audio recordings, and interactive simulations (Picciano, 2017). They also give chances for discussion and cooperation with social learners, while independent learners can gain from self-paced modules and customized learning pathways (Picciano, 2017).

Critical Pedagogical Approaches and Theories

Several critical educational ideas and methods are pertinent for distant, online, and hybrid learning. The

Community of Inquiry (CoI) framework is one such strategy that highlights the need for cognitive presence, social presence, and educational presence in creating a relevant and exciting online learning environment (Garrison et al., 1999). The CoI framework gives online conversations and activities a theoretical basis for encouraging interaction, teamwork, and critical thinking (Garrison et al., 1999).

A different educational strategy is inquiry-based learning, which encourages problem-solving and active learning via discovery and study (Garrison et al., 1999). This method fosters a better comprehension of the material by encouraging students to investigate, ask questions, and build their expertise (Garrison et al., 1999). Constructivism, which contends that students actively develop their knowledge and understanding via interactions with the learning environment, is another pertinent philosophy in online education (Garrison et al., 1999). This paradigm stresses the value of learner-centered education, in which students actively generate meaning and relate new knowledge to what they already know (Garrison et al., 1999).

Challenges and Benefits of Remote, Online, and Hybrid Learning

Challenges Faced in Implementing Remote, Online, and Hybrid Learning

There are difficulties in putting remote, online, and hybrid learning approaches into practice. The necessity for suitable technical infrastructure and access to dependable internet connection is one of the main concerns (Picciano, 2017). The successful delivery of remote learning is hampered in specific locations due to restricted access to technology and internet connection, especially in rural or underserved areas (Desmet et al., 2021). This digital gap exacerbates educational disparities, restricting chances for specific student groups (Desmet et al., 2021).

Another issue is the need for sound teaching methodologies and course design that encourage participation and interaction in the online environment (Smoyer et al., 2020). Educators must modify their instructional strategies in remote or hybrid learning environments to keep students motivated and actively engaged (Algayres et al., 2022). To retain student interest and involvement, this needs the deployment of cutting-edge instructional strategies, such as gamification or project-based learning (Algayres et al., 2022).

Furthermore, connections, community building, and social contact among learners might be challenging to promote in distant and online learning due to the absence of face-to-face engagement and physical presence (Smoyer et al., 2020). The lack of face-to-face contact might affect students' participation in learning and feelings of belonging (Smoyer et al., 2020). In virtual settings, educators must develop innovative strategies to encourage social interaction and teamwork among students (Chaves, 2022).

In addition, the transition to remote, online, and hybrid learning might make it difficult for teachers to change their methods of instruction and pick up the required technology skills (Acosta et al., 2022). Faculty members need training and assistance to use digital technologies efficiently, traverse online platforms, and create engaging online learning experiences (Acosta et al., 2022). Acosta et al. (2022) noted that the COVID-19 pandemic's quick shift to remote learning underlined the necessity for professional development opportunities and tools to assist

instructors in this shift.

Benefits and Advantages of Remote, Online, and Hybrid Learning

Despite the obstacles, there are many advantages and benefits to using remote, online, and hybrid learning techniques. The adaptability and accessibility they provide students are among their main benefits (Ahmad et al., 2022). Without regard to time or place, remote and online learning enables people to access instructional materials at any time and from any location (Ahmad et al., 2022). Since it enables people to pursue education quickly and conveniently, this flexibility is especially advantageous for students with other obligations, such as employment or family duties (Ahmad et al., 2022).

The ability for tailored and adaptable learning experiences is another benefit of remote, online, and hybrid learning. According to each learner's unique requirements and preferred learning methods, digital platforms and learning management systems monitor their progress and provide feedback and resources that are specifically adapted to them (Picciano, 2017). This tailored approach increases student engagement and encourages greater material comprehension.

Additionally, prospects for improved worldwide connections and cooperation are provided through remote, online, and hybrid learning (Algayres et al., 2022). Through online platforms, students interact virtually with people from different racial and ethnic origins and participate in group projects and peer-to-peer learning activities (Algayres et al., 2022). This exposure to many viewpoints and cultures enhances the educational process and encourages learners to adopt a global perspective (Algayres et al., 2022).

In order to improve the learning experience, digital technologies and multimedia resources like movies, simulations, and interactive modules are often used in remote, online, and hybrid learning models (Picciano, 2017). Considering various learning styles and preferences, these multimedia tools make complicated topics more approachable and exciting (Picciano, 2017).According to Chin et al. (2020), hybrid, online, and remote learning models can potentially increase educational access while fostering new and engaging learning opportunities. In order to create inclusive and exciting learning environments, educators take advantage of these models by using technology and modifying teaching practices.

Factors Contributing to Successful Implementation
Effective Course Design

In order to successfully deploy remote, online, and hybrid learning, effective course design is essential (Picciano, 2017). The learning goals, material structure, and instructional methods that support the intended learning outcomes should all be considered while designing online courses (Picciano, 2017). Instructions, learning materials, and evaluations in a well-designed course should encourage participation and substantive learning experiences (Dziuban et al., 2018). To increase student engagement and participation, it should also include multimedia materials, interactive exercises, and chances for collaboration (Picciano, 2017).

Learner Engagement Strategies

Successful remote, online, and hybrid learning experiences depend on learner engagement (Bates, 2023). To encourage students' active engagement and motivation, educators should use a variety of tactics (Bates, 2023). Incorporating interactive debates, collaborative projects, and knowledge applications in the real world are examples (Peculea, 2023). It also increases student engagement and encourages better comprehension of the material, providing learners with immediate feedback and opportunities for self-reflection (Peculea, 2023). Additionally, encouraging social connection and community via online platforms increases student satisfaction and engagement (Bates, 2023).

Technological Infrastructure and Support

For the deployment of remote, online, and hybrid learning to be effective, a robust technical infrastructure is required (Kanetaki et al., 2022). To effectively participate in online activities, students must have access to a dependable internet connection, proper hardware, and software tools (Kanetaki et al., 2022). To resolve any technological problems or difficulties that students have, adequate technical help should be offered (Kanetaki et al., 2022). Additionally, to enable seamless communication, material distribution, and evaluation, institutions should invest in safe and user-friendly learning management systems and other digital platforms (Kanetaki et al., 2022).

Faculty Training and Support

Faculty support and training are crucial for effectively deploying remote, online, and hybrid learning (Kanetaki et al., 2022). To successfully plan and provide online training, educators must acquire the relevant skills and expertise (Kanetaki et al., 2022). The best practices for online teaching and learning should be the main emphasis of training programs, pedagogical techniques, and technology resources (Kanetaki et al., 2022). To meet educators' changing requirements and problems in distant and online contexts, ongoing support and professional development opportunities should be offered (Kanetaki et al., 2022). Collaboration and experience exchange among faculty members also help to enhance the methods used in online instruction continuously (Kanetaki et al., 2022).

Institutional Support and Policies

Institutional support and policies greatly aid the effective adoption of remote, online, and hybrid learning (Kanetaki et al., 2022). Institutions ' unambiguous rules and policies should support online courses' design, delivery, and evaluation (Kanetaki et al., 2022). Faculty and students should be given access to sufficient resources, such as financing, technological support, and aid with instructional design (Kanetaki et al., 2022). Institutions should also set up systems for assessing the efficacy and quality of online courses and programs (Kanetaki et al., 2022). Regular feedback and evaluation ensure the alignment of online offers with institutional objectives and student requirements (Kanetaki et al., 2022).

Case Studies of Successful and Failed Attempts

Case Studies of Successful Implementation

Numerous case studies have demonstrated the effective use of online, hybrid, and remote learning approaches. For instance, an interactive videoconferencing system was introduced in Greek primary schools as part of research (Basilaia & Kvavadze, 2020). This technology significantly aided in collaborative synchronous learning activities that took place remotely. Another case study examined how Georgia's schools switched to online learning during the COVID-19 epidemic. Despite these obstacles, the research concluded that the nation could continue with its educational system using online platforms for distance learning (Basilaia & Kvavadze, 2020). These case studies show the significance of an efficient technology infrastructure and support system by successfully adapting educational techniques to distant and online contexts.

Case Studies of Unsuccessful Implementation

Additionally, case studies show the difficulties and mistakes in putting remote, online, and hybrid learning models into practice. For instance, research conducted in China during the COVID-19 epidemic discovered that online teaching and learning could not entirely replace face-to-face instruction due to technological issues, student involvement, and the general learning environment (Zhang, 2020). In addition, the research found that instructors believed they lacked the preparation they needed to teach online (Zhang, 2020). Another case study in China highlighted the significance of addressing educational equity concerns in emergency remote teaching and learning, such as access to technology and mental health education (Zhang, 2020). These case studies highlight the need for thorough strategies and support mechanisms to enable effective implementation by illuminating the complexity and limits of remote and online learning.

Strategies, Pedagogical Approaches, and Technology Integrations

Strategies and Approaches Used in Successful Implementations

In order to execute distant, online, and hybrid learning models successfully, various pedagogical techniques are often used. The flipped classroom model is one such strategy that involves getting students involved in learning resources and activities outside of class to make synchronous lessons more interactive and collaborative (Picciano, 2017). This method encourages learners to actively participate, think critically, and solve problems (Picciano, 2017). Project-based learning is another tactic, where students work on tasks that require them to utilize their knowledge and abilities in real-world settings (Kanetaki et al., 2022). This method encourages learners to collaborate, comprehend concepts more deeply, and be creative (Kanetaki et al., 2022). In addition, formative evaluations, including conversations, quizzes, and self-reflection exercises, provide continuous feedback and encourage student growth (Kanetaki et al., 2022).

Learner-centered techniques, in which students actively participate in their learning processes, are also given top priority by educators in successful implementations (Kanetaki et al., 2022). Offering options and autonomy in learning activities, enabling self-regulated learning, and fostering reflection and metacognition are some ways to

do this (Kanetaki et al., 2022). Teachers improve motivation, engagement, and lifelong learning abilities by allowing students to take charge of their education (Kanetaki et al., 2022).

Technology Integrations and Tools Utilized in Remote, Online, and Hybrid Learning

Tools and technology integrations are essential in hybrid, online, and remote learning settings. Learning management systems (LMS) are popular platforms that provide a centralized location for communication, evaluation, and course materials (Kanetaki et al., 2022). LMS systems allow teachers to plan and deliver curriculum, lead conversations, and monitor student progress (Kanetaki et al., 2022).

Real-time conversations, presentations, and cooperation between students and instructors are possible using video conferencing solutions like Zoom or Microsoft Teams (Kanetaki et al., 2022). In distance learning contexts, these technologies aid in fostering a feeling of presence and facilitating social interactions (Kanetaki et al., 2022).Teachers create dynamic and exciting learning materials using digital content production technologies like multimedia authoring software or online collaboration platforms (Zhang, 2020). These technologies make it possible to produce interactive simulations, virtual laboratories, and movies that improve student comprehension and engagement (Zhang, 2020).

Additionally, by offering information and feedback that matches each learner's requirements and progress, adaptive learning technologies and intelligent tutoring systems personalize the learning experience (Zhang, 2020). These tools monitor student progress and modify the learning environment using algorithms and data analytics (Zhang, 2020).Successful implementations include educators carefully deciding on and incorporating the right technology and resources to support the pedagogical methods and learning goals (Zhang, 2020). To guarantee the successful use of these technologies, they also provide training and assistance to students (Zhang, 2020). In distant, online, and hybrid learning contexts, instructors use technology appropriately to improve student engagement, collaboration, and the overall learning experience.

Outcomes and Results of Successful and Failed Attempts

Results and Outcomes Achieved in Successful Implementations

Successful online, hybrid, and distant learning paradigm applications have produced fruitful consequences. For instance, Widyaningsih & Yusuf's (2019) research concerned applying Project-Based Learning (PjBL) facilitated by E-Learning via Lesson research activities in physics learning planning courses. According to the research, this strategy increased student learning results. The students received the learning experience well and thought the learning environment was enjoyable. According to Widyaningsih and Yusuf (2019), implementing PjBL with lesson study activities and e-learning improved the subject's learning standards.

Lessons Learned from Failed Attempts

Failure to adopt hybrid, online, and distant learning models teaches us essential insights. According to Deverell

(2009), crises catalyze development and learning. Evaluating the situations after facing difficulties and setbacks is crucial to pinpoint areas that need improvement. Lessons learned from unsuccessful initiatives regarding technology infrastructure, instructional design, learner engagement techniques, and support systems. The efficacy and success of remote, online, and hybrid learning models can be improved by using these lessons to guide future deployments and to solve the problems that have been found.

Best Practices and Recommendations

Best Practices for Educators and Institutions

Adopting best practices by educators and institutions is necessary to effectively implement remote, online, and hybrid learning models. Based on the literature study, the following best practices are suggested:

1. *Participate in extensive preparation:* To guarantee the successful adoption of remote, online, and hybrid learning, educators and institutions should participate in rigorous planning. This entails creating exciting and dynamic learning activities, providing clear learning goals, and creating a well-structured curriculum (Varsi et al., 2019).

2. *Offer continuing assistance and instruction:* For implementation to be effective, instructors and students must have ongoing support and training. Institutions should provide professional development opportunities to improve instructors' knowledge of online teaching and learning techniques (Varsi et al., 2019). A pleasant learning experience is facilitated by offering technical assistance and resources to overcome technological difficulties (Lyytinen & Newman, 2014).

3. *Encourage learner interaction and engagement:* In hybrid, online, and remote learning contexts, encouraging learner interaction and engagement is crucial. To promote active engagement and fulfilling learning experiences, educators should add interactive activities, debates, and team projects (Silva et al., 2015).

4. *Use a range of teaching techniques:* Using various instructional tactics helps accommodate various learning preferences and styles. To improve student comprehension and engagement, educators should think about combining multimedia materials, simulations, and real-world applications (Thorpe & Morgan, 2007).

Recommendations for Policymakers and Decision-Makers

Adopting remote, online, and hybrid learning methods effectively depends on policymakers and decision-makers. We advise the following suggestions:

1. *Invest in technology infrastructure:* To provide fair access to remote learning possibilities, policymakers should prioritize technological infrastructure expenditures. This entails giving students and teachers access to dependable internet connection and suitable hardware and software resources (Varsi et al., 2019).

2. *Create enabling laws and regulations:* Lawmakers should create laws and regulations that facilitate the efficient use of online, hybrid, and remote learning. These regulations must include data protection,

accessibility, and quality control (Raps, 2005).

3. *Encourage cooperation and information sharing:* Policymakers must support collaboration and knowledge sharing between academic institutions, teachers, and researchers. Establishing networks, gatherings, and venues for exchanging best practices and lessons gained might help with this (Loscalzo et al., 2011).

Enhancing Faculty and Student Support in Remote, Online, and Hybrid Learning

The following tactics are advised to improve staff and student support in remote, online, and hybrid learning:

1. *Offer chances for continual professional development:* Institutions should allow faculty members to advance their knowledge of online teaching, instructional design, and technology integration (Loscalzo et al., 2011). This might include mentorship programs, webinars, and seminars.

2. *Encourage community and support:* Institutions should provide online communities and venues for academics and students. This includes peer mentorship programs, virtual office hours, and online discussion forums (Loscalzo et al., 2011).

3. *Provide all-inclusive student support services:* According to Serhal et al. (2022), institutions should make sure that students have access to all-inclusive support services, which include academic advising, counseling, and technological help. Providing clear communication routes and tools to respond to students' queries and concerns is essential.

4. *Encourage the development of digital literacy abilities in professors and students:* Institutions should place a high priority on this. Instructing digital technologies, information literacy, and online research techniques are examples of this (Thorpe & Morgan, 2007).

Institutions improve staff and student support by implementing these techniques, making deploying hybrid, online, and remote learning models easier.

Conclusion

Summary of Key Findings

The literature study has highlighted several important discoveries about using remote, online, and hybrid learning models. These approaches have emerged due to technological improvements, building on the historical evolution of distant learning. There are advantages and problems associated with the change in educational delivery methods. Technological developments have greatly influenced remote learning, which has made synchronous and asynchronous learning, individualized learning experiences, and adaptive learning possible. Pedagogical strategies and theoretical frameworks provide direction for successful online education. In remote, online, and hybrid learning, accommodating learner preferences and encouraging student engagement are crucial. Implementation effectiveness depends on various elements, including teacher training, institutional support, and technological infrastructure.

Implications for the Field of Education and Learning

The results have significant ramifications for the study of education and learning. The popularity of remote, online, and hybrid learning approaches has increased educational opportunities and given students freedom. Institutions and educators must modify their teaching methods and create curricula encouraging participation and interaction in online settings. By investing in technology infrastructure, creating supportive regulations, and encouraging cooperation, policymakers and decision-makers play a significant role in assisting the adoption of these models. For implementation to be effective, it is crucial to improve staff and student support, which includes continual professional development, encouraging a sense of community, and offering extensive student support services.

Future Research Directions

Future studies should resolve outstanding issues and investigate fresh remote, online, and hybrid learning prospects. Further research is required to fully comprehend how these approaches affect learning results, student involvement, and satisfaction. The efficacy of various pedagogical approaches and instructional practices in online contexts can also be explored via research. Studies might also look at how technology helps to promote individualized and flexible learning. The long-term impacts of distance, online, and hybrid learning on educational access and equality need further study. The function of institutional support and policies in promoting practical implementation is also studied via research.

In conclusion, hybrid, remote, and online learning methods have changed the educational landscape, presenting new possibilities and problems. Educators, institutions, politicians, and academics collaborate to increase the efficacy and success of these models, thereby enhancing the quality of instruction and learning experiences by understanding the essential results, consequences, and future research directions.

References

Acosta, B., Goles, R., & Villegas, I. (2022). Effects of lnu Student's mental health with the implemented online learning amidst pandemic of social studies. International Journal of Research Publications, *1*(104). https://doi.org/10.47119/ijrp1001041720223529

Ahmad, N., Rashid, N., Abdullah, N., Yean, C., Sharif, S., & Rahmat, N. (2022). Exploring learners' motivations for studying from home. *International Journal of Academic Research in Business and Social Sciences*, *1*(12). https://doi.org/10.6007/ijarbss/v12-i1/12151

Algayres, M., Timcenko, O., & Triantafyllou, E. (2022). From flipped to remote to hybrid: Transformation of a game-based flipped classroom during the Covid-19 pandemic. *European Conference on e-Learning*, *21*(1), 10–18. https://doi.org/10.34190/ecel.21.1.715

Barone, F. (2022). Ethnographic insights across cultures: Remote futures for teaching and learning anthropology. *Teaching and Learning Anthropology*, *5*(2). https://doi.org/10.5070/T35252643

Basilaia, G., & Kvavadze, D. (2020). Transition to online education in schools during a Sars-Cov-2 coronavirus (Covid-19) pandemic in Georgia. *Pedagogical Research*, *5*(4). https://doi.org/10.29333/pr/7937

Bates, T. (2023). Key issues in teaching and learning resulting from the Covid-19 pandemic. *Journal of Natural Resources and Life Sciences Education*, *1*(52). https://doi.org/10.1002/nse2.20118

Chaves, M. G. (2022). The community of inquiry instructional strategies impact on student satisfaction on remote learning. *Recoletos Multidisciplinary Research Journal*, *10*(1), 191–204. https://doi.org/10.32871/rmrj2210.01.14

Chin, K., Kwon, D., Gan, Q., Ramalingam, P., Wistuba, I., Prieto, V., & Aung, P. (2020). Transition from a standard to A hybrid on-site and remote anatomic pathology training model during the coronavirus disease 2019 (COVID-19) pandemic. *Archives of Pathology and Laboratory Medicine*, *1*(145), 22–31. https://doi.org/10.5858/arpa.2020-0467-sa

Czosnek, L., Richards, J., Zopf, E., Cormie, P., Rosenbaum, S., & Rankin, N. M. (2021). Exercise interventions for people diagnosed with cancer: A systematic review of implementation outcomes. *BMC Cancer*, *21*(1), 643. https://doi.org/10.1186/s12885-021-08196-7

Desmet, O., Crimmins, D., Seigfried-Spellar, K., & Gentry, M. (2021). Ame+cyber: Evaluating the online delivery of A holistic cyber-related talent development program. *Gifted Education International*, *1*(38), 3–24. https://doi.org/10.1177/02614294211054361

Deverell, E. (2009). Crises as learning triggers: Exploring a conceptual framework of crisis-induced learning. *Journal of Contingencies and Crisis Management*, *17*(3), 179–188. https://doi.org/10.1111/j.1468-5973.2009.00578.x

Dziuban, C., Graham, C. R., Moskal, P. D., Norberg, A., & Sicilia, N. (2018). Blended learning: The new normal and emerging technologies. *International Journal of Educational Technology in Higher Education*, *15*(1). https://doi.org/10.1186/s41239-017-0087-5

Ford, M. W., & Greer, B. M. (2005). The relationship between management control system usage and planned change achievement: An exploratory study. *Journal of Change Management*, *5*(1), 29–46. https://doi.org/10.1080/14697010500036031

Garrison, D. R., Anderson, T., & Archer, W. (1999). Critical inquiry in a text-based environment: Computer conferencing in higher education. *Internet and Higher Education*, 2(2–3), 87–105. https://doi.org/10.1016/S1096-7516(00)00016-6

Ghazi-Saidi, L., Criffield, A., Kracl, C. L., McKelvey, M., Obasi, S. N., & Vu, P. (2020). Moving from face-to-face to remote instruction in a higher education institution during A pandemic: Multiple case studies. *International Journal of Technology in Education and Science*, *4*(4), 370–383. https://doi.org/10.46328/ijtes.v4i4.169

Kanetaki, Z., Stergiou, C., Bekas, G., Jacques, S., Troussas, C., Sgouropoulou, C., & Ouahabi, A. (2022). Grade prediction modeling in hybrid learning environments for sustainable engineering education. *Sustainability*, *14*(9), 5205. https://doi.org/10.3390/su14095205

Kang, B. (2021). *How the Covid-19 pandemic is reshaping the education service* (pp. 15–36). https://doi.org/10.1007/978-981-33-4126-5_2

Kao, C. L., Chien, L. C., Wang, M. C., Tang, J. S., Huang, P. C., Chuang, C. C., & Shih, C. L. (2023). The development of new remote technologies in disaster medicine education: A scoping review. *Frontiers in Public Health*, *11*, 1029558. https://doi.org/10.3389/fpubh.2023.1029558

Loscalzo, M., Clark, K. L., & Holland, J. (2011). Successful strategies for implementing biopsychosocial

screening. *Psycho-Oncology*, *20*(5), 455–462. https://doi.org/10.1002/pon.1930

Lyytinen, K., & Newman, M. (2014). A tale of two coalitions – Marginalising the users while successfully implementing an enterprise resource planning system. *Information Systems Journal*, *2*(25), 71–101. https://doi.org/10.1111/isj.12044

Marcynuk, K., Kinsner, W., Renaud, R., & Seniuk Cicek, J. (2022). Towards personalization of student learning and engagement in A first-year undergraduate course. *Proceedings of the Canadian Engineering Education Association*. https://doi.org/10.24908/pceea.vi.15958

Parker, A. M., Watson, E., Dyck, N., & Carey, J. P. (2021). Traditional versus open-book exams in remote course delivery: A narrative review of the literature. *Proceedings of the Canadian Engineering Education Association*. https://doi.org/10.24908/pceea.vi0.14845

Peculea, L. (2023). Online engagement and satisfaction of undergraduate engineering students during the Covid-19 pandemic. *European Proceedings of Educational Sciences*, 177–188. https://doi.org/10.15405/epes.23045.18

Picciano, A. G. (2017). Theories and frameworks for online education: Seeking an integrated model. *Online Learning*, *21*(3). https://doi.org/10.24059/olj.v21i3.1225

Raps, A. (2005). Strategy implementation – An insurmountable obstacle?. *Handbook of Business Strategy*, *6*(1), 141–146. https://doi.org/10.1108/08944310510557152

Serhal, E., Pereira, C., Armata, R., Hardy, J., Sockalingam, S., & Crawford, A. (2022). Describing implementation outcomes for a virtual community of practice: The echo Ontario mental health experience. *Health Research Policy and Systems*, *20*(1), 17. https://doi.org/10.1186/s12961-022-00818-1

Shepherd, H. L., Geerligs, L., Butow, P., Masya, L., Shaw, J., Price, M., Dhillon, H. M., Hack, T. F., Girgis, A., Luckett, T., Lovell, M., Kelly, B., Beale, P., Grimison, P., Shaw, T., Viney, R., & Rankin, N. M. (2019). The elusive search for success: Defining and measuring implementation outcomes in A real-world hospital trial. *Frontiers in Public Health*, *7*, 293. https://doi.org/10.3389/fpubh.2019.00293

Silva, C., Stevenson, M., & Thürer, M. (2015). A case study of the successful implementation of workload control. *Journal of Manufacturing Technology Management*, *26*(2), 280–296. https://doi.org/10.1108/JMTM-10-2013-0144

Smoyer, A. B., O'Brien, K., & Rodriguez-Keyes, E. (2020). Lessons learned from Covid-19: Being known in online social work classrooms. *International Social Work*, *63*(5), 651–654. https://doi.org/10.1177/0020872820940021

Thorpe, E. R., & Morgan, R. E. (2007). In pursuit of the "ideal approach" to successful marketing strategy implementation. *European Journal of Marketing*, 41(5/6), 659–677. https://doi.org/10.1108/03090560710737679

Varsi, C., Solberg Nes, L., Kristjansdottir, O. B., Kelders, S. M., Stenberg, U., Zangi, H. A., Børøsund, E., Weiss, K. E., Stubhaug, A., Asbjørnsen, R. A., Westeng, M., Ødegaard, M., & Eide, H. (2019). Implementation strategies to enhance the implementation of ehealth programs for patients with chronic illnesses: Realist systematic review. *Journal of Medical Internet Research*, *21*(9), e14255. https://doi.org/10.2196/14255

Vu, P., Cao, V., Vu, L., & Cepero, J. (2014). Factors driving learner success in online professional development. *International Review of Research in Open and Distributed Learning*, *15*(3). https://doi.org/10.19173/irrodl.v15i3.1714

Widyaningsih, S. W., & Yusuf, I. (2019). Implementation of project-based learning (Pjbl) assisted by e-learning through lesson study activities to improve the quality of learning in physics learning planning courses. *International Journal of Higher Education*, *9*(1), 60. https://doi.org/10.5430/ijhe.v9n1p60

Zhang, T. (2020). *Learning from the emergency remote teaching-learning in China when primary and secondary schools were disrupted by Covid-19 pandemic*. https://doi.org/10.21203/rs.3.rs-40889/v1

Author Information

Rusen Meylani

https://orcid.org/0000-0002-3121-6088

Istanbul Aydin University, Department of Education

Besyol, Inonu Cad. No:38, Kucukcekmece, Istanbul, 34295

Turkiye

Contact e-mail: *rusenmeylani@aydin.edu.tr*