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ANALYSIS OF IMPLEMENTATION CRITICAL AND CYBER PEDAGOGY: A REVIEW

ANÁLISE DA IMPLEMENTAÇÃO DA PEDAGOGIA CRÍTICA E CIBERNÉTICA: UMA REVISÃO

I Gusti Ayu Sundari Meyanti
Educational Science Study Program, Universitas Pendidikan Ganesha, Indonesia
sundari.meyanti@undiksha.ac.id

Putu Kerti Nitiasih
Educational Science Study Program, Universitas Pendidikan Ganesha, Indonesia
kertinitiasih@undiksha.ac.id

Putu Nanci Riastini
Educational Science Study Program, Universitas Pendidikan Ganesha, Indonesia
putunanci.riastini@undiksha.ac.id

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Corresponding author:

sundari.meyanti@undiksha.ac.id

Abstract: This study is written to see how the implementation of cyber and critical pedagogy through previous studies, as well as its implications on students" cognitive progress. A descriptive and qualitative literature study methodology is used in this study.Students' Cognitive Level by using Critical and Cyber Pedagogies The Strength of Critical and Cyber Pedagogy Implementation in the Classroom The Weakness of Critical and Cyber Pedagogy Implementation in the ClassroomIn conclusion, the literature review research about the implementation of critical and cyber pedagogy has highlighted the importance of incorporating these approaches into educational practices. Studies have shown that critical pedagogy encourages students to think critically about their surroundings and question societal norms, while cyber pedagogy emphasizes the use of technology in education. The implementation of these approaches can lead to a more engaging and inclusive learning environment where students are encouraged to participate actively in their own education. Additionally, critical and cyber pedagogy can help bridge the digital divide by providing access to technology for all students. However, there are challenges that need to be addressed when implementing these approaches. Teachers need training and support in order to effectively incorporate critical and cyber pedagogy into their teaching practices. Furthermore, there is a need for ongoing evaluation and assessment of these approaches to ensure that they are effective in improving student learning outcomes. Overall, the literature review research highlights the potential benefits of incorporating critical and cyber pedagogy into educational practices while also acknowledging the challenges that must be overcome for successful implementation.

Keywords: Student cognitive. Cyber pedagogy. Critical pedagogy.

Resumo: Este estudo é escrito para ver como a implementação da pedagogia cibernética e crítica através de estudos anteriores, bem como suas implicações no progresso cognitivo dos alunos. Neste estudo é utilizada uma metodologia descritiva e qualitativa de estudo da literatura.Nível Cognitivo dos Alunos com o Uso da Pedagogia Crítica e Cibernética A Força da Implementação da Pedagogia Crítica e Cibernética em Sala de Aula A Fraqueza da Implementação da Pedagogia Crítica e Cibernética em Sala de AulaEm conclusão, a revisão da literatura pesquisas sobre a implementação da pedagogia crítica e cibernética têm destacado a importância de incorporar essas abordagens nas práticas educativas. Estudos mostraram que a pedagogia crítica incentiva os alunos a pensar criticamente sobre o ambiente e questionar as normas sociais, enquanto a

pedagogia cibernética enfatiza o uso da tecnologia na educação. A implementação dessas abordagens pode levar a um ambiente de aprendizagem mais envolvente e inclusivo, onde os alunos são incentivados a participar ativamente de sua própria educação. Além disso, a pedagogia crítica e cibernética pode ajudar a reduzir a divisão digital, fornecendo acesso à tecnologia para todos os alunos. No entanto, há desafios que precisam ser enfrentados ao implementar essas abordagens. Os professores precisam de treinamento e apoio para incorporar efetivamente a pedagogia crítica e cibernética em suas práticas de ensino. Além disso, há uma necessidade de avaliação e avaliação contínuas dessas abordagens para garantir que sejam eficazes na melhoria dos resultados de aprendizagem dos alunos. No geral, a pesquisa de revisão da literatura destaca os benefícios potenciais de incorporar a pedagogia crítica e cibernética nas práticas educacionais, ao mesmo tempo em que reconhece os desafios que devem ser superados para uma implementação bem-sucedida.

Palavras-chave: Cognitiva do aluno. Pedagogia cibernética. Pedagogia crítica.

1. Introduction

Pedagogy is a term that covers what a teacher does to influence the learning of others. Pedagogy is a method of teaching, and is used for use by a teacher, involving teaching style, theory, assessment and feedback (Nanjundaswamy et al., 2021). Pedagogy, in its most basic understanding, is the branch of science that studies student-teacher relationships in education, the position of the school as an educational institution in society, its relationship to education, and its models in the cultural domain (Özaydınlık, Kevser & Sağlık, 2021). Pedagogy evolves from a variety of factors including theory and research evidence, political impetus, evidence from practice, individual and group reflection, the experience and expertise of the teacher, the expectations and needs of society. Pedagogy therefore not only describes the activity of teaching, but reflects the production of broader social and cultural values in learning relationships. The concept of pedagogy reflects society's values and beliefs about learning, and is usually derived from two main paradigms: the traditional notion of learning as an undeniable biological and cognitive acquisition of knowledge, or alternatively the notion of learning as a cultural and social construction within communities of practice (Kumar, 2021). In conventional pedagogy, the relationship between teachers and students is somewhat orthodox and resembles power and status relationships in society (Aksakalli, 2018).

In relation to the rapid development of the times in this modern era, it is certain that education will undergo a transformation that goes hand in hand with the socio-cultural changes that occur in people's lives. Education has changed dramatically from the concept of traditional thinking in teaching and learning before to ideological education that has made various changes in the field of education (Mahmoodarabi & Khodabakhsh, 2015). In modern use pedagogy means: A place of

instruction; a school, college, university; instruction, discipline, training; a system of introductory training; a means of guidance; the art, occupation, or practice of teaching (Kumar, 2021). Therefore, the application of pedagogy in this modern era emphasizes on the active practice of students in implementing the knowledge that students gain at school into the community environment. The active role of learners in cultural & social communities creates a greater focus on how learning happens, and values the diversity of learners and their preferred learning styles and ways. Pedagogy, in its most basic sense, is the branch of science that examines the student-teacher relationship in education, the position of the school as an educational institution in society, its relationship to education and its models in the cultural domain (Özaydınlık, Kevser & Sağlık, 2021). The ability of individuals to learn to see themselves in interaction with the world is the root of pedagogy.(Özaydınlık, Kevser & Sağlık, 2021).

The implementation of appropriate pedagogy will be aligned with the learning methods adapted to the era. The 21st century is an era that increasingly requires students to have skills such as critical thinking, problem solving, collaboration, and active learning, which are referred to as 21st century learning skills (Xu & Zhou, 2022). In the 21st century, students should be evaluated not only by examining their ability to answer questions, but also by their level of knowledge and ability to apply 21st century learning skills. In addition, study skills are considered as lifelong learning skills that can enable students to get used to their continuously transforming living conditions and become more responsive. The fundamental skills that individuals must have in the 21st century are life and career skills, knowledge, media, and technology skills, and learning and innovation skills.

The critical thinking skills required in the 21st century education era are in line with the implementation of critical pedagogy. Students learn how to be agents. Learners learn to be critical, questioning, have an inquisitive and curious mind and create and evaluate knowledge (Smith & Seal, 2021). In literal terms, critical pedagogy is a concept that debates the problems of education and the education system itself. Critical pedagogy encourages students to examine power structures and challenge what they are taught (Kavenuke & Muthanna, 2021). The goal of critical pedagogy is to signal how questions of audience, voice, power, and evaluation actively work to build schools into environments where teachers and students can question the relationship between theory and practice, critical analysis and common sense, learning, and social change (Kaya & Kaya, 2017). In the context of critical pedagogy, (Freire, 2005) asserts that education without a critical side only

reproduces inequality because it only equips learners to provide answers to the things that are presented to them by teachers. Critical pedagogy appeals to teachers who value fundamental ideals such as equality, democracy, freedom and solidarity, and who seek ways to embody those ideals in their professional practice as educators (Siqueira, 2021). In this regard, the findings support the idea that mentorship through training, modeling behaviors, and reflecting on conversations in and through practice are an important part of their process of implementing critical pedagogy (Allen-Handy et al., 2021).

Not only 21st century learning, the implementation of the latest pedagogy can be aligned with the Industry 4.0 revolution. There were nine pillars of Industry 4.0 when it was first announced: cyber-physical systems, Internet of Things, Big data, 3D printing, robotics, simulation, augmented reality cloud computing and cybersecurity (Yang & Gu, 2021). The Industrial Revolution 4.0 has affected the world of education so much that schools have no other choice but to carry out activities using Information and Communication Technology (ICT) where one of the hallmarks of the industrial revolution 4.0 is automation, artificial intelligence, and combining the physical, digital, and biological worlds at the same time (Kodrat, 2020). This digitalization process also has an impact on learning patterns in the classroom, especially during the pandemic that occurred in 2020. The shift of teaching and learning activities from conventional to online, automatically changes the habit patterns of students and teachers where learning activities are no longer carried out in the classroom, but through networks or e-learning (Prayetno et al., 2022).

This gradual development is now able to attribute a new meaning of content storage to the social masses and that in the process of easily obtainable information and rapid content re-production process as an automated system of social education function, and may be able to provide a form of social function to individuals (Paiva et al., 2022). The development of such digital skills starts from the realization that the power of technology in producing a better generation in the digital world lies in its ability to facilitate critical thinking and problem solving in the real world where students live, play and learn (Kivunja, 2013).

The presence of information technology in education plays an important role in helping students complete the learning process as well as possible (Dewanti et al., 2021). The usage of different modes such as images, videos, and music in creating outputs in response to relevant local and global social issues and also communication technologies have enabled teachers and students to

widen the audience in communicating relevant socio-political issues for a more productive dialog (Valdez, 2020). Therefore, learning during the pandemic requires all academics to find the best solution for online learning. The pedagogy that is in line with the above case is cyber pedagogy. "Cyber pedagogy" refers to the science or art of teaching in online environments. Cyber pedagogy focuses on motivations and teaching methods that are appropriate to the technology being used, rather than on methods that best fit the traditional face-to-face classroom context (Dewanti et al., 2022). Cyber pedagogy is understood and designed by teachers in delivering e-learning because e-learning is not just giving assignments in the Learning Management System (LMS) and giving many tasks to students without interacting, providing feedback, and facilitating students with new learning experiences (Kapitzke, 2000). The cyber pedagogy perspective involves the reinvention of Open Education that generates collaborative spaces for intrinsically motivated co-education, online learning, and critical practices (Rodés et al., 2021). One of the principles in virtual learning is the existence of authority and collaboration, the authority of students has the freedom to choose teaching materials, teaching materials and learning resources as well as the time, media used and place of learning. This is important to consider because research (Naidoo, 2020) states that the use of online pedagogy ignores the limitations of time, place and barriers while empowering active collaboration between students in communication in practice which is the focus. Cyber Pedagogy focuses on motivation and teaching methods tailored to the technology being used, as opposed to methods best suited for traditional face-to-face classroom contexts. By using learning technology tools, both learners and teachers can develop innovative solutions to the most pressing problems and emerging issues in society (Nanjundaswamy et al., 2021).

Along with the development of the era that demands transformation in all aspects of life, especially the world of education, teachers and teaching staff are seen as needing to be adaptive to changes and adjust themselves so that learning activities remain relevant to the times. However, many teachers and educators are still unfamiliar with the implementation of critical pedagogy and cyber pedagogy as the spirit of all learning methods that will be used in the classroom. Therefore, this report is written to see how the implementation of cyber and critical pedagogy through previous studies, as well as its implications on students' cognitive progress.

2. Methodology

A descriptive and qualitative literature study methodology is used in this study. As the research is carried out under natural circumstances (in natural settings) and the data is processed subjectively, the qualitative research method is a naturalistic research methodology (Sugiyono, 2016). Qualitative data is thought to be essential for analyzing how both pedagogies are used and serves as the foundation for research on critical and cyber pedagogy. Secondary data, such as research findings from numerous papers, library sources, and documents, are the kind of information that was gathered.

3. Results

Implementation of Critical Pedagogy

The application of critical pedagogy can be seen from a research study conducted by Kavenuke & Muthanna in 2021 with a study entitled "Teacher Educators' Perceptions and Challenges of Using Critical Pedagogy: A Case Study of Higher Teacher Education in Tanzania". This study aims to investigate the perceptions and challenges faced by teacher educators regarding the use of Critical Pedagogy in teacher education in Tanzania. This qualitative research with a case study method used 17 lecturers as its research subjects. Despite the positive discussions about critical pedagogy, the author believes that the application of critical pedagogy requires teacher educators to not only have teaching professionalism, but also have a strong passion for teaching and developing their students' critical and creative thinking skills. In relation to students in Tanzania, the authors explain that adopting critical pedagogy in teaching and learning can result in meaningful classroom experiences that place social issues at the center of class discussions. (Kavenuke & Muthanna, 2021). The findings obtained in this study are that critical pedagogy demands building friendly relationships with students and encouraging dialogic interaction; all of this leads to critical reflection in return, ensuring a better understanding of the subject content. The discussion also addresses the challenges that the author encountered while conducting the research of this study as it relates to the implementation of critical pedagogy in Tanzania, namely class size, the way of

teaching and the language of instruction used, teaching resources, and the assessment process.

Research related to critical pedagogy was also conducted by Smith & Seal in 2021. The research, entitled "The Contested Terrain of Critical Pedagogy and Teaching Informal Education in Higher Education", aims to explore the background of critical pedagogy, its principles, goals and approaches, and examine its worldwide influence on the teaching of informal educators, using qualitative descriptive methods in presenting the author's findings. The author formulates that there are several things that become the principles of critical pedagogy, namely, education is basically political, knowledge must be related to and develop from the life experiences of the participants, and knowledge must be co-created among all participants in the learning process. Meanwhile, the purpose of critical pedagogy is to develop critical thinkers who create new knowledge, so that people become aware of the oppression they experience and develop the will to act, then so that people can make connections between personal experiences and the power of the wider community. (Smith & Seal, 2021). In their article, the authors present a discussion related to a step change model for implementing critical pedagogy in informal education teaching in higher education. According to Smith & Seal, the way to apply critical pedagogy is to change the way teachers teach and their relationship with students, encourage structure as far as possible and build social relations, show themselves as pedagogical experts, internally and externally.

Previous research that also discussed the implementation of critical pedagogy in the classroom was also conducted by Valdez (2020) with the title "Research in Critical Pedagogy: Implications for English Language Classrooms in Asia". The author conducted research with the aim of examining the theoretical and methodological approaches used in studies in English language classrooms in Asia, and continued by identifying existing trends and potential issues related to the application of critical pedagogy in diverse multilingual and multicultural contexts in Asia. Using an ethnographic design and library research model, the authors found issues related to the application of critical pedagogy in Asian contexts such as, in terms of critical pedagogy and scholarship in English language teaching, the authors expect teachers to demonstrate the potential for collaboration and innovation on the part of teachers, and recognize the linguistic, social, and political realities in local contexts. The second area that this research addresses is critical pedagogy and productive spaces of engagement. These studies show that while teachers recognize their important role in shaping students' perspectives in the teaching and learning process, they are also

aware of real-world issues that can impact on student learning. The third is critical pedagogy and multiliterate knowledge. As the authors observed, the use of multiliteracies in the context of critical pedagogy allows learners to practice agency through projects that utilize their cultural resources and draw on personal experiences to engage in meaningful dialogue. In addition, the author also examines the relationship between critical pedagogy and transformative practices. Based on the differences in power relations between the state and culture, critical pedagogy as applied in the ELT classroom provides a good venue for constructive debate on issues that are important to teachers and students. (Valdez, 2020).

Implementation of Cyber Pedagogy

The research entitled "The SMILE, A Cyber Pedagogy based Learning Management System Models" (Dewanti et al., 2022) aims to create an LMS model that is tailored to student characteristics to improve the learning experience by utilizing various multidimensional learning resources in Cyber Pedagogy. Researchers used this research and development method using the Analyze, Design, Develop, Implement, and Evaluate (ADDIE) instructional design framework and the Waterfall system development model to develop learning materials and infrastructure. This research involved 50 students from the Bali Institute of Technology and Business, as well as five lecturers. The result of this research is the creation of a prototype LMS model SMILE (Simple, Multidimensional, and Interactive Learning Ecosystem) designed to meet the learning needs and expectations of the largest market of higher education today, namely the millennial generation. The results are consistent with the initial objectives observed, namely providing a simple, engaging, and interactive learning process through the use of various multi-dimensional educational resources within the Cyber pedagogy corridor and National Education Standards.(Dewanti et al., 2022).

Another research related to cyber pedagogy is research conducted by Paiva et al. (2022) with the title "Cyber-Pedagogy: Human Instrumentalization and Machine Mastery". This study aims to make readers aware of the problem of the relationship between humans and machines and bring paths and reflections based on the perspective of studies and debates in the field of Philosophy, about this function that can produce subservient behavior in humans as creators of digital functions, but lose this function due to the emergence of technology that develops itself. Using the research

method of bibliography and collecting data in the form of discussions based on the term Cyber-pedagogy, which is replaced and empowered from a neologistic perspective that associates this term with a pedagogical operation in which autopoietic machines educate individuals and can subject them to a process of human instrumentalization, in which humans will become instruments for the use of machines and digital resources by losing their essence as creators of virtual digital resources. In a more simplified way, the rapid form of operation of virtual systems, grows and means so much to humans that it is associated with a natural form of human functioning, the characteristics of which are similar to virtual networks, where it can be concluded that Cyber-pedagogy, i.e. education provided by digital resources, forms a new standard of human functioning, where virtual, digital environments and machines meet as intermediaries of great importance to humans (Paiva et al., 2022).

A study by Rust (2019) entitled "Toward Hybridity: The Interplay of Technology, Pedagogy, and Content across Disciplines at a Small Liberal Arts College" had a research objective to qualitatively examine the teaching views underlying faculty decision-making around technology integration at a small liberal arts college. Findings revealed broad similarities in attitudes toward teaching and learning across the different departments and indicated that, although faculty members possessed a wide range of content knowledge, pedagogical knowledge, and technological knowledge inferences, the greatest tensions and successes were articulated as faculty discussed issues at the intersection of technological knowledge, content knowledge, and pedagogical knowledge. Technology is treated with great skepticism here, and the exploitation by the e-learning industry of the idea that there are easier ways to outsource teaching and learning is one that generates much discontent in circles that privilege face-to-face discussions, small teacher-student ratios, and critical discourse. These findings also reveal that our most thoughtful educational designs emerge at the intersection of our knowledge of technology, pedagogy, and content, especially when this knowledge base interacts with positive beliefs about the potential of new tools. TPACK, thus, is useful as a framework for decision-making, only to the extent that it allows us to achieve goals directed by our deepest beliefs about teaching/learning. Transformative faculty members take the time to confront their deeply held values, determine whether those values can hold up under scrutiny, and themselves, determine whether they can hold up under scrutiny, and then reflectively use their knowledge base (content, pedagogical, and technological) to create a path forward.(Rust, 2019).

The study entitled "Cyber Pedagogy as Critical Social Practice in a Teacher Education Program" is one of the studies that investigated the implementation of cyber pedagogy. The study was conducted by (Kapitzke, 2000). This study used a case-studies methodology to investigate the use of online technology in one in-service teacher education context. The study found that online pedagogy shapes spatiality, multiliteracies and new identities in communication and learning. Cyber technologies and related pedagogical activities are conceptualized in this paper not only as tools, but also as social practices. This approach enables a focus on learning and teaching as transformative practices. After a description of the course content and delivery, the paper turns to an analysis of four key pedagogical features of data-generated cyber pedagogy. These features are: teaching and learning as self-directed activities, changes in student identity and self-perception, new forms of technological literacy, and e-tutorials. The researcher found that the use of cyber pedagogy emphasizes the student center perspective and should prepare students as real independent learners. In addition, it can build sustainability of students' independent learning which is an important concern for teachers, parents and stakeholders. Using cyber pedagogy, teachers should also create lesson plans where each stage of learning activities is described and evaluated. An understanding of asynchronous and synchronous media is also needed so that teachers can combine synchronous and asynchronous media in teaching (Kapitzke, 2000).

From the presentation of research studies related to the implementation of critical and cyber pedagogy, it can be said that the new things that innovate in each study are the research setting, research subjects, research methods, and research perspectives discussed. However, critical and cyber pedagogy became the main foundation of these studies because all studies wanted to show the effectiveness of critical pedagogy in real classrooms..

4. Discussion and Conclusion

Students' Cognitive Level by using Critical and Cyber Pedagogies

The implementation of critical and cyber pedagogy has a significant impact on students' cognitive development. By encouraging critical thinking, reflection, and engagement with different perspectives, critical digital pedagogy might improve students' cognitive development (Montelongo, 2019). Critical pedagogy encourages students to question the status quo and think critically about the

world around them. A significant strategy for fostering pupils' ability for critical thought (Kavenuke & Muthanna, 2021). This approach helps students develop a deeper understanding of complex issues and promotes independent thinking. Students do not receive information in a fixed, concrete, and predetermined form; rather, they actively produce it. Critical pedagogy also assists learners develop self-awareness by making them understand their own abilities. It lead them to which they may understand themselves better and voice their deeper thoughts (Aksakalli, 2018).

Similarly, cyber pedagogy emphasizes the use of technology in education, which can enhance students' learning experiences. Regarding proficient technology students in higher education, integrating general computing into traditional classroom teaching might enhance new learning opportunities (Kumar, 2016). By incorporating digital tools into their lessons, teachers can engage students in interactive activities that promote problem-solving skills and creativity. Making learning applicable to the cyber environment to accomplish independent and collaborative learning has an advantageous impact of such technologies on pedagogy (Boumarafi, 2015).

Together, critical and cyber pedagogy create an environment that fosters intellectual growth and encourages students to become active learners. Through these approaches, students are empowered to take control of their own learning experiences and develop the skills necessary to succeed in today's rapidly changing world. Thus, the implementation of critical and cyber pedagogy is essential for promoting cognitive development among students. By encouraging critical thinking and utilizing digital tools, educators can help prepare their students for success both inside and outside the classroom.

The Strength of Critical and Cyber Pedagogy Implementation in the Classroom

Critical and cyber pedagogy are two powerful tools that can be implemented in the classroom to enhance student learning. Critical pedagogy involves teaching students to think critically about the world around them, while cyber pedagogy involves using technology to enhance learning.

The strength of critical pedagogy lies in its ability to empower students to question the status quo and challenge existing power structures. To develop a learning environment that supports and encourages students to engage in critical commentary, critical pedagogy calls for changes in

educational roles, curriculum material, and classroom procedures (Dehler & Lewis, 2001) . By encouraging students to think critically about social issues, they become more engaged in their own learning and develop a deeper understanding of the world around them. Similarly, cyber pedagogy allows teachers to incorporate technology into their lessons, making learning more interactive and engaging for students. Technologies for communication and information have had an impact by enabling interactive communication and access to digital resources for all courses, and the blending of pedagogy and technology has spawned a variety of teaching and learning methods (Stacey, 2007). This approach can help students develop important digital literacy skills that will be essential for success in today's increasingly digital world.

By combining critical and cyber pedagogies, teachers can create a dynamic classroom environment that fosters creativity, innovation, and critical thinking. Students who are exposed to these approaches are better equipped to navigate complex social issues and succeed in an ever-changing technological landscape.

The Weakness of Critical and Cyber Pedagogy Implementation in the Classroom

Critical and cyber pedagogy are two approaches to education that have gained popularity in recent years. While both of these methods have their strengths, they also have weaknesses when it comes to implementation in the classroom.

One weakness of critical pedagogy is that it can be difficult to implement in traditional classroom settings. This approach emphasizes student-centered learning and encourages students to question authority and challenge dominant narratives. However, many teachers may not feel comfortable relinquishing control over their classrooms or may not have the necessary training to facilitate this type of learning environment. A teacher should not assume that knowledge is simply contained in the curriculum's material. The story, the play, and the cultural displays from the kids are just a few of the various tools the instructor can employ. These kind of tools empower the pupils and encourage their creativity and critical thinking (Muhammad, 2019).

Similarly, cyber pedagogy can be challenging to implement due to limited access to technology or lack of technological literacy among students and teachers. The use of distance learning in the cyber pedagogy space is a learning design for the modern era, nevertheless could the

teacher store each aspect and deliver it within these technological walls. If not, charming online learning will not be possible to achieve. Becoming a teacher in the future requires the ability of cyber pedagogy attributes as a vehicle for smart education. (Prayetno, et,al, 2022). Additionally, online learning environments can lack the personal connection and interaction that is essential for effective teaching and learning. Technologies are viewed with plenty of doubts in these circumstances, and the exploitation that the e-learning industry has led to, the idea that teaching and learning can be more easily outsourced, and put aside face-to-face discussion, small teacher-to-student ratios, and critical discourse (Julie, 2019).

In conclusion, while critical and cyber pedagogy offer valuable perspectives on education, their implementation in the classroom requires careful consideration of the unique challenges presented by each approach. Teachers must be willing to adapt their teaching styles and embrace new technologies in order to effectively incorporate these methods into their classrooms.

In conclusion, the literature review research about the implementation of critical and cyber pedagogy has highlighted the importance of incorporating these approaches into educational practices. Studies have shown that critical pedagogy encourages students to think critically about their surroundings and question societal norms, while cyber pedagogy emphasizes the use of technology in education. The implementation of these approaches can lead to a more engaging and inclusive learning environment where students are encouraged to participate actively in their own education. Additionally, critical and cyber pedagogy can help bridge the digital divide by providing access to technology for all students.

However, there are challenges that need to be addressed when implementing these approaches. Teachers need training and support in order to effectively incorporate critical and cyber pedagogy into their teaching practices. Furthermore, there is a need for ongoing evaluation and assessment of these approaches to ensure that they are effective in improving student learning outcomes.

Overall, the literature review research highlights the potential benefits of incorporating critical and cyber pedagogy into educational practices while also acknowledging the challenges that must be overcome for successful implementation.

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