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The Philosophical Perspective Of ICT In Education

Dr. Sharon Lalremruati Zadeng
Assistant Professor, Department Of Education (PG), St Anthony's College, Shillong, Meghalaya, India.

Dr Temjenkala Jamir
Assistant Professor, Department Of Philosophy, Captain Williamson Sangma State University, Meghalaya, India.

Abstract
This paper explores the integration of ICT in education through a pragmatic philosophical lens. Drawing from the works of John Dewey, William James, Andy Clark, and David Chalmers, it attempts to analyze the extension of human cognition while acknowledging potential risk through ICT. ICT can function as an extension of human cognition while acknowledging potential risks. The pragmatic view rejects an inherent quality of ICT and emphasizes a practical outcome, and as such, whatever the technology will do (or facilitate) only matters if the implementation is deliberate by balancing innovation with critical reflectivity. Additionally, the paper also argues from a pragmatist viewpoint that ICT, when effectively employed within the context of pedagogies that promote active, critical, and reflexive learning, is a tool that facilitates the development of thinking skills and experiential learning. It deals with digital dependency, cognitive overload, and equity in education. Through critical analysis of both supportive evidence and counterarguments, the paper concludes that ICT's value in education lies not in the technology itself but in how it is applied to create meaningful learning experiences that connect to students' real-world needs while developing essential intellectual capabilities.

Keywords: *ICT in education, pragmatic philosophy, extended mind thesis, experiential learning, digital cognition, educational equity*

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I. Introduction

In modern times, most schools opt for ICT (Information and communication technology) in the classroom, and this mode of teaching has been a transformative force that improves cognitive abilities and increases access to knowledge. It is also to be understood that this stance accentuate importance of substantiality and practical learning which needs the parity between technological innovation, reflective inquiry, and critical thinking (Dewey, 1938; Selwyn, 2016). The promotion of ITC is archetypical. This categorization of knowledge is now non-linear through information and communication technology, which integrates online platforms, artificial intelligence, and virtual simulations, unlike the traditional model, which was centralized (Bayne, 2015). The entry of ICT technologies into the educational arena carries positive and negative aspects. The former includes questions of access, tailoring, and enhancement in cognitive skills as aids these technologies boost. The other side stems from concerns of over-dependence on digital tools, which may inhibit rather than augment thinking, spark overloaded cognition, and enhance social disparity (Carr, 2010; Selwyn, 2016). This perspective is particularly suited to analyze ICT because it does not view technology as inherently good or bad but evaluates it based on its consequences (Dewey, 1938).It is essential to tend to the gaps ICT leaves for convenience in fluent navigation through modern society, which marks an advance or a retreat for our cognitive capabilities as a primitive human being. Engaging through philosophical means, especially in the area of ICT concern, marks the consideration of the real effects posed by these technologies on acquiring knowledge, logic, and social justice. As elaborated by John Dewey and William James, pragmatism calls to appreciate what comes out of an activity, learn by doing, and determine if the educational outcome is worthy of the effort. Philosophers Andy Clark and David Chalmers (1998) further complicated this discussion when they proposed their thesis of an "extended mind," which posits that you do not complete your mind with external, mental tools; rather, your mind is a dynamic intertwining of the internal and external and that digital tools are not hyperseeds, they are part of you. ICT as Cognitive Extension — ICT can expand our intellect -- When ICT is properly used, it enhances our thinking ability. Yet, it can impede independent critical thought development if misused or relied too much on (Sweller, 2011). This duality makes the case for a nuanced, philosophical analysis that addresses the promises and problems of technocratic integration within educational environments. This paper argues that although ICT can improve cognitive abilities and facilitate experiential learning, its effectiveness depends on careful integration and ongoing assessment. We base this on the works of John Dewey, William James, Andy Clark, and more recent researchers like Neil Selwyn. Using a practical

framework, we can address ethical issues on educational equity and access while balancing technological innovation and reflective inquiry.

II. Review Of Related Literature

Dewey (1938) affirmed the importance of experiential learning (though he called it learning through experience), arguing that education needed to happen during the very life of the learner, rather than preparing them for things later. Similarly, William James (1907) argued that the end of an idea is its practical consequence. Clark and Chalmers (1998) introduced the "extended mind" hypothesis which proposes that digital tools are no longer external aids but elements of human cognition.

Drawing on Vygotsky's (1978) socio-cultural theory, ICT is claimed to play a role in scaffolding learning via social interaction and digital collaboration. His notion of the "zone of proximal development" indicates that digital tools function as mediators and allows learners to execute tasks beyond their sole abilities. Likewise, Siemens' (2005) connectivism theory highlights the important role that digital literacy and networked learning play in education today.

Postman (1993) discussed the irresponsibly of adopting technology for the sake of it, leading to a technocentric worldview and possible abandonment of important educational values. However, in the case of Laurillard (2012), she claims that while you push pedagogical engagement through the ICTs, you can very well do that when using the principles of instructional design. Mishra and Koehler (2006) elaborate on the need to blend together variables of technology, pedagogy, and content knowledge for harnessing the power of ICT-based learning in an effective manner.

Ensuring these basic needs developed into educational equity as contemporary scholars such as Selwyn (2016) and Bayne (2015) delineated into cognitive load and digital fluency hemispheres. Such perspectives, in turn, help to shape a model that recommends an intelligent blending of technological immersion and human critical thinking.

ICT as a Tool for Learning from a Pragmatism Perspective:

Pragmatism in education sets the stage for education to be seen as active, experiential involvement within the world. This perspective is one of not only knowledge collection but also technology empowerment. If we apply ICT as a pragmatic learning tool, we can orchestrate contexts in which students are invited, even compelled, to engage in developing and exploiting digital devices, interactive simulations, and collaborative environments to explore real-world problems.

ICT in Developing Interactive and Participatory Learning Environments:

Digital tools now enable students to interact directly with content in various ways, such as through interactive software, virtual labs and online forums. Instead of passively consuming information, these settings demand engagement from students. For example, in science classes, students can use virtual simulations as controlled digital environments with scientific variables resembling the scientific method, where they receive immediate feedback on their hypotheses (Luckin et al., 2016). ICT turns the classroom into a dynamic learning laboratory where students can manipulate data, see the results, and refine their experiments.

In Addition, digital collaboration technologies also facilitate peer-to-peer communications and group problem-solving using tools such as shared documents, real-time chat, and video conferencing. It is a participatory paradigm that sustains a community of learners who work together, share various perspectives, and participate in critical dialogues. That participatory model creates a community of learners engaged in critical conversation, exchange, and collective problem-solving. That sort of environment is consistent with the pragmatic detail that learning is social, a point Dewey made when he argued that any education must entail active engagement with content and the community (Dewey, 1916).

'Education is Not Preparation for Life; Education is Life Itself' Dewey's Assertion:

Experiential learning captures the essence of John Dewey's famous quote. According to Dewey, education should not be conceived as an isolated period designed and restricted to preparing people for issues that loom in the future but as a living experience that is inextricable from the living of everyday life itself. This viewpoint on ICT emphasizes how technology has the power to transform education into a comprehensive, lived experience. Learning becomes pertinent and urgent when ICT is incorporated into conventional teaching methods. For example, when students engage in digital tools for research, team collaboration, and project creation, they take part in life as it unfolds rather than rehearsing for life beyond school. Still, other students could use this form of digital storytelling to document and reflect on their experiences as they develop their digital literacy. Having them create the content is a way to reinforce academic concepts and encourage learners to view learning as part of their growth and preparation to participate fully in society (Dewey, 1938).

Using information and communication technology (ICT) is completely challenging the traditional

boundaries dividing formal learning from life. It enables learners to access up-to-the-minute information, participate in global conversations, and apply their learning to real-life situations. In this context, the inherent fluidity between education and real life echoes Dewey's educational philosophy, suggesting that ICT can (and ideally should) beautify all the elements that form action, thus turning education into a dynamic flow of experiences.

William James' idea that truth is what works in practice:

This pragmatic school included the famous William James, who proposed that an idea is valid if it works in practice. This pragmatic notion of truth matches closely with current patterns of ICT use in education. James argued that the only thing that verifies learning is when it improves the human experience and solves real-world problems rather than pursuing static, abstract knowledge (James, 1907). This idea implies that digital tools should be evaluated based on their potential to improve educational outcomes and to enable meaningful involvement in ICT. At the pragmatic level, ICT lends itself to immediate feedback, iterative learning and the ability to personalize education, so those outcomes give a practical indication that thoughtful ICT use is worthy of pursuit, reflecting James' belief that truth is, at its core, tied to utility.

Digital tools in education make it easier to follow a hypothesis, experiment, and modification cycle, mirroring the usually pragmatic scientific method. ICT provides a framework for testing and refining concepts iteratively based on their outcomes through interactive problem-solving exercises, simulations and real-time analytics. This procedure supports James' claim that knowledge is dynamic and changes due to experience and real-world application. As a pragmatic learning tool, we may argue that ICT revolutionizes education by fostering participative, dynamic settings that encourage students to solve real-world problems. With digital learning, Dewey's idea that "education is not preparation for life; education is life itself" takes on new significance as technology enables education into "a continuous, interconnected process.

Similarly, William James' pragmatic conception of truth—validating concepts by their application—highlights the significance of assessing digital tools according to how they affect learning objectives. When taken as a whole, these philosophical observations offer a strong foundation for comprehending the revolutionary possibilities of ICT in education while serving as a reminder to teachers of the necessity of integrating technology into teaching and learning procedures with consideration and reflection.

The Enhancement of Cognitive Capacities

The "extended mind" thesis of philosophers David Chalmers and Andy Clark (1998) offers a strong theoretical foundation for the claim that technology can constitute a crucial extension of human cognitive systems. According to Clark and Chalmers, mental processes use external instruments to extend into the environment rather than being limited to the brain alone. According to this theory, ICT—such as digital platforms, smart gadgets, and AI-powered systems—can integrate with a student's cognitive machinery in the classroom, improving their capacity for memory, analysis, and problem-solving.

Technology as a Cognitive Extension:

According to Clark and Chalmers, when utilized consistently and dependably, devices like computers, smartphones, and calculators are functionally equal to internal cognitive processes rather than only being cognitive aids (Clark & Chalmers, 1998). This suggests that a digital learning platform, for instance, can store, retrieve, and alter information as quickly as a human mind in educational settings. Using these technologies, students extend their cognitive reach by shifting some of their cognitive load onto machines that process and analyze large volumes of data. Imagine an AI teaching program that can evolve at a student's pace, provide individualized feedback and track growth over time. It helps the learner's memory, creates new ideas thereby functioning as an integral part of the individuals cognitive process (Luckin et al., 2016).

Cultivating Reflective Thinking using ICT

According to John Dewey's educational philosophy, education should promote reflective thinking since it is essential for growth and lifelong learning (Dewey, 1938). Integrating new information with preexisting cognitive frameworks and critically analyzing one's experiences are both components of reflective thinking. These modules inspire and encourage students to consider and evaluate their reasoning, come up with alternative solutions, and adjust their tactics based on the outcomes. The foundation of Dewey's theory of education as an active, continuous process is this iterative process of formulating hypotheses, testing them, and considering the outcomes.

Moreover, students can collaborate on their ideas and communicate with one another using social media and discussion boards. Through this group reflective practice, exposure to various perspectives encourages students to think critically about their own thought processes. According to Dewey (1916), learning should start with the learner's needs and experiences. ICT can aid in this situation by providing personalized

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Educational Framework Based on Needs and Experiences of Learners,

As advocated by Dewey (1916) that effective education must be tailored to each learner's unique experiences, interests, and requirements rather than being a one-size-fits-all undertaking. Information and communications technology (ICT) makes this process possible, enabling educational content to frame it according to the learner's background, learning preferences, and speed.

For instance, adaptive learning systems assess how students interact with the content and accordingly as the level of difficulty shift as the student progresses. This ensures that the educational process remains engaging, challenging, and achievable. ICT tools provide teachers with real-time data on their students' performance, enabling them to understand individual student needs better. With a data-based approach, education ensures flexibility and adaptability through continuously refining teaching methods.

According to Dewey, education must connect itself with the learner's life experiences; ICT unequivocally reiterates Dewey's proposition because it transforms the classroom into an ever-changing, active environment where knowledge is being constructed cooperatively and in context. Clark and Chalmers' expanded mind thesis shows us how we can understand ICT as a valuable extension of our cognitive processes, extending our memory, processing, and retrieval abilities of knowledge. Such technological improvement furthers the goal of cultivating reflective thinking, a key focus of Dewey's educational purpose. It is apparent that Dewey's principle of good education hinges on the learners experiences that provides scope for evolving awareness and stimulating participation through interactive and collaborative lessons and practices.

A Pragmatic Critique of Risks to Deep Thinking:

Although the introduction of ICT in the field of education is revolutionary a practical and critical analysis, reminds us that this utility doesn't come without risk.

In The Shallows: What the Internet is Doing to Our Brains (2010), Nicholas Carr explores how overreliance on digital platforms can undermine critical thinking and analytical reasoning. Here Carr opines that with the contiguity of digital data in our finger tips the knowledge that one attain is "surface learning"(2010) rather than comprehensive and reflective idea. Carr claims that our brains prefer brief, skimming encounters over prolonged focus due to the constant onslaught of hyperlinks, notifications, and multimedia information. He argues that this change impairs our capacity for critical analysis, complex concept synthesis, and nuanced understanding—skills necessary for in-depth intellectual investigation.

Carr's worries stem from cognitive psychology and neuroscience. Frequent interruptions and multitasking, both of which are prevalent in digital environments, threaten working memory and the brain's ability to learn deeply (Carr, 2010). Also, using digital gadgets often can interfere with our ability to focus for long periods, which is a prerequisite for reading dense materials or solving complex puzzles. The function of these cognitive processes dwindles academics, which has more expansive implications in the context of our relationship with the outside world.

According to cognitive load theory, learners' ability to process information profoundly is reduced when they are inundated with too much information or stimuli (Sweller, 2011). In this context, a pragmatic critique of digital tools urges frequent re-evaluations to ensure they are developed and utilized to promote long-term, reflective thought rather than just information retrieval. It is pertinent that educators and policymakers are cautious and alert on how technology impacts students' learning processes and be prepared to modify the technology or instructional strategies if greater cognitive skills are being compromised. Although instant access to information and interactive learning opportunities offered by ICT can enhance education, a practical critique highlights the dangers of relying too much on these resources. Nicholas Carr (2010) highlights how the digital world can encourage cursory processing at the price of in-depth, critical thought. Nonetheless pragmatic philosophy advocate the significant of assessing educational resources according to their usefulness.

A Pragmatic Framework for Ethical and Social Considerations

As education resources become increasingly broader and more diverse, pragmatic philosophy examines the practical implications of increasing utility in technological change, both ethical and social. Pragmatists maintain that beyond its practical benefits, technology needs to be analyzed for its broader consequences for equity, society and human well-being. This assumption says the practices surrounding technological action need to be assessed and reassessed constantly to ensure that they contribute to human

welfare (Mitcham 1994).

Ethical Imperatives and Social Equity

To advance democracy and social justice, John Dewey (1938) was a fervent supporter of education. In his view, education should be a tool for social advancement by producing knowledgeable, engaged citizens who can support a democracy. According to Dewey, a strong educational system fosters ethical consciousness, critical thinking, and knowledge transfer—all of which are necessary for a functioning democracy. Technology advancements like ICT and AI must be carefully considered for their potential to support or contradict these democratic values when they are incorporated into the classroom. Another ethical concern is the digital divide, access to latest technologies which might not be possible for many and hence significant disparity occurs when it comes to the usage of ICT. The digital divide can deepen existing social inequalities as ICT deprives the disadvantaged target groups of the opportunities for digital learning by making ICT essentially inaccessible to them, Warschauer (2003). This is a moral imperative in practical terms to ensure equitable access to ICT. We can thus contend that the digital revolution must aim for the improvement of the life style and well being of every section of the society.

Ongoing Reflection and Adjustment:

The pragmatic approach appeal to the notion that technology persist on the appraised consequence which aligns to Dewey (1938) objective that learning must be responsive to the needs and experiences of the student, adjusting to new possibilities and challenges as they present themselves. Thus, advancements in education through technology should not be static; they should be continuously monitored and adjusted for moral, practical, and pragmatic validity. By continually assessing the impact of ICT and AI on learning and social equity, teachers can identify unforeseen consequences such as cognitive overload or digital exclusion and make adjustments. This kind of reflective focus means ensuring technology remains a tool to build social progress and drive education forward rather than inadvertently deepen existing divides. In conclusion, we can all agree: a constructive evaluation of ICT and AI in education must consider ethical and social factors! In the context of Dewey's belief that education is the engine of democracy and social justice, we need to ensure that technological advances enable inclusive, thoughtful and ethical learning environments instead of entrenching inequality. Unless we tend to them, data ethics, algorithmic bias, and the digital divide are urgent issues in our devices. By answering the pragmatic philosophy's demand scenario of continuous reflection and adaptation, we can lead the technology for the future of education to outcomes that actually support human welfare, social progress and social justice.

Addressing Counterarguments:

These critics of ICT in education (Information and Communication Technology) contend that increased reliance on technology undermines rote memory and critical reasoning that is historically more traditional, but ultimately more disciplined, leaving students in a savage state of dependent knowledge reliant upon vitally instant digital manipulation for information collection. Yet, in practice, ICT is useful as far as it is actually used, not because it exists. If well designed within a human-centered pedagogy that uses experiential learning and reflective practice as a central concern, ICT can encourage ways of thinking that enhance cognition and enable active, inquiry-based learning.

This helps mitigate the possible risks critics warn about (Dewey, 1938; Selwyn, 2019; Buckingham, 2015). A heated discussion among academics and professionals has been triggered by the quick spread of information and communication technology (ICT) in the classroom. Critics argue that the increasing reliance on digital tools is undermining traditional cognitive skills like sustained attentiveness, critical thinking and deep reading and fostering dependence. Such fears reflect the evidence that digital environments tend to encourage shallow processing, divided attention, and skimming (Carr, 2010). But, a pragmatic perspective challenges this notion and posits that the application of ICT is what gives it utility not the technology itself. By keeping a focused, human-focused mindset, educators can utilize ICT to encourage active, inquiry-based learning to drive cognitive development. In this paper we try to analyze the crucial debate about integrating ICT in the academic field and how it is vital to stress on the experiential and reflective learning to make the education more effective in learning and productive.

Criticism of ICT in Education:

Dependence and Shallow Learning:

Critics say heavy use of digital tools can create a dependence on technology. They become dependent, and since students get into the habit of passively consuming readily available information instead of thinking critically and independently about the material they learn. Nicholas Carr offers compelling evidence that prolonged exposure to digital stimuli encourages superficial processing and reduces focus on complex tasks.

Digital environments, as mentioned earlier in the paper promote rapid scanning of information, that hampers the attention span for a person which is essential for understanding and reflecting on ideas and thoughts. (2010)

Undermining of Traditional Intellectual Abilities:

It is believed that it encourages an over-reliance on tech, which undermines traditional intellectual skills, such as analytical reasoning, problem-solving and critical reading. Critics argue that because digital tools often automate processes and provide quick answers, students lose the motivation or opportunity to master these important skills independently. Concerns have been raised that as students become more skilled at ICT, they will become less effective at reading complex text, synthesizing strong arguments, and taking a critical approach. It has the potential to harm intellectual growth (Carr, 2010).

Advantages of ICT from the Pragmatic Perspective

Use Technology as a Tool, Not an End:

Practically speaking, as described by philosophers such as John Dewey and more recently scholars such as Neil Selwyn, it is not technology itself that is a concern, but how it is applied in the educational setting. According to Dewey (1938), technology's possible drawbacks depend on its use rather than being inherent. Dewey believed that education ought to be a lived, active process in which learning is grounded in practical problems and introspective practice.

Enhancing Human Capabilities

ICT can enhance human potential through inquiry-based, active learning if it is integrated thoughtfully. Selwyn (2019) in fact advance the utility of interactive digital tools and AI-powered learning platforms as a boon for the humanity by making it possible to understand the intricate reality of the world through practicality and by encouraging to verify, articulate and reflect upon ideas and concepts and by doing so helps us to solicit technology for deeper cognitive engagement in our life be it in academic or in our day to day life.

A human-centered pedagogy that emphasizes experiential learning and reflective practice can reduce the risks associated with excessive technology use, according to William Buckingham (2015), who supports this viewpoint.

Practical Outcomes and Continuous Evaluation

The most important paradigm requires the iterative improvement of ICT integration and continually evaluating whether the implementation of the technology facilitates learning. The impact on students' engagement, critical thinking, and overall academic performance with digital tools is often measured with this approach. When detrimental effects like cognitive overload or dependence are noticed, teachers can modify their approaches to better match technology use with learning objectives. ICT's potential adverse effects are reduced while its positive effects are maximized thanks to this dynamic, outcome-oriented viewpoint.

Addressing Counterarguments

Teachers can enhance the immersive use of ICT while preventing reliance on ICT and surface learning risks through active learning and practical problem solving (Dewey, 1938; Buckingham, 2015). Research pours out that embedding ICT in an organized curriculum framework significantly boosts students' analytical and critical thinking skills. New technologies, including the use of interactive digital media, collaborative online platforms and adaptive learning systems have all been linked with greater student motivation and better problem-solving (Selwyn, 2019).

A pragmatic viewpoint provides a fair assessment despite legitimate worries about dependence and the decline of traditional cognitive abilities expressed by opponents of ICT in education. ICT must be carefully incorporated into teaching methods that prioritise learning and reflective inquiry to improve human capabilities effectively. According to Dewey (1938), how technology is used, not the technology itself, is the problem.

Through implementing a human-centered pedagogy and ongoing assessment of the valuable results of digital tools, educators can minimize problems and capitalize on the capitalized technologies of ICT to facilitate inquiry-based, active learning. From the above discussion, it is clear how ICT from practical approach when amalgamate with well educational approach and strategy can act as an influential agent for overall growth both cognitive and learning.

III. Conclusion

ICT in education from a pragmatic perspective suggests that, if introduced wisely, ICT is an extension of human cognition that enables better access to information and learning. What Clark and Chalmers (1998) have called the extended mind thesis illustrates how digital tools can be part of our cognitive machinery. For

Dewey, education is not preparation for life, it is life, and he has perhaps been the most influential proponent of the idea that ICT are better equipped than other media to create this dynamic and reflective process that defines learning in a globalised society (Dewey, 1916). Additionally, a pragmatic perspective - based on actual ongoing progress in evaluating technology performance (Selwyn, 2019) - promotes human-centered teaching that supports learning through experience and moral reasoning, therefore lessening the potential of dependency and superficiality.

Collectively these findings indicate that ICT are not inherently harmful, but rather depend on their use in education. When used to facilitate active learning, digital innovations can greatly enhance cognitive capacity and enable lifelong learning. But as technology continues to develop in line with the goals of education, it is of paramount importance that a balance is struck between new practices and reflective pedagogies to ensure shared benefits and not an undue dilution of traditional intellectual competencies (Buckingham, 2015). Hence, this paper encourages research on adaptive learning models capable of mixing the full potential.

References

[1]. Buckingham, D. (2019). The Media Education Manifesto. John Wiley & Sons.
[2]. Bayne, S. (2015). What's The Matter With 'Technology-Enhanced Learning'? *Learning, Media And Technology*, 40(1), 5-20. Https://Doi.Org/10.1080/17439884.2014.915851
[3]. Carr, N. (2010). *The Shallows: What The Internet Is Doing To Our Brains*. W.W. Norton & Company.
[4]. Clark, A., & Chalmers, D. (1998). The Extended Mind. *Analysis*, 58(1), 7-19. Https://Www.Jstor.Org/Stable/3328150
[5]. Cole, M., John-Steiner, V., Scribner, S., & Souberman, E. (1978). Mind In Society. Mind In Society The Development Of Higher Psychological Processes. Cambridge, MA: Harvard University Press. Https://D1wqtxts1xzle7.Cloudfront.Net/40011524/Vygotsky
[6]. Dewey, J. (1916). *Democracy And Education*. Macmillan. Https://Doi.Org/10.7312/Dewe21010-003
[7]. Dewey, J. (1986). Experience And Education. The Educational Forum, 50(3), 241–252. Https://Doi.Org/10.1080/00131728609335764
[8]. Duke, B., Harper, G., & Johnston, M. (2013). Connectivism As A Digital Age Learning Theory. The International HETL Review, 2013(Special Issue), 4-13.
[9]. James, W. (1907). *Pragmatism: A New Name For Some Old Ways Of Thinking*. Longmans, Green & Co. Https://Doi.Org/10.1126/Science.26.667.464
[10]. Laurillard, D. (2012). *Teaching As A Design Science: Building Pedagogical Patterns For Learning And Technology*. Routledge. Https://Doi.Org/10.4324/9780203125083
[11]. Luckin, R. (2018). Enhancing Learning And Teaching With Technology: What The Research Says. UCL IOE Press. UCL Institute Of Education, University Of London, 20 Bedford Way, London WC1H 0AL.
[12]. Mishra, P., & Koehler, M. J. (2006). Technological Pedagogical Content Knowledge: A Framework For Teacher Knowledge. *Teachers College Record*, 108(6), 1017-1054. Https://Doi.Org/10.1111/J.1467-9620.2006.00684.X
[13]. Postman, N. (2011). Technopoly: The Surrender Of Culture To Technology. Vintage.
[14]. Selwyn, N. (2016). *Is Technology Good For Education?* Polity Press.
[15]. Sweller, J. (2011). Cognitive Load Theory. In Psychology Of Learning And Motivation (Vol. 55, Pp. 37-76). Academic Press. Https://Doi.Org/10.1016/B978-0-12-387691-1.00002-8
[16]. Turvey, K., & Pachler, N. (2020). Design Principles For Fostering Pedagogical Provenance Through Research In Technology Supported Learning. Computers & Education, 146, 103736. Https://Doi.Org/10.1016/J.Compedu.2019.103736.
[17]. Warschauer, M. (2003). Technology And Social Inclusion: Rethinking The Digital Divide. MIT Press.