

Connectivism in English E-Learning for Students in Public Senior High Schools

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Abstrak: Di Era digital saat ini, dampak dari pembelajaran online di dunia pendidikan sangat luar biasa. Peneliti mengeksplor dalam mengontekskan connectivisme diantara Generasi Z di dalam kerangka budaya dan pendidikan di lingkungan Sekolah Menengah Atas Negeri. Penelitian ini mengaplikasikan penelitian studi pustaka, data-data diambil dari artikel, buku, dan publikasi akademik yang relevan yang mendiskusikan terkait implementasi E-Learning. Teristimewa di dalam pembelajaran Bahasa Inggris pada peserta didik di Sekolah Menengah Atas. Peneliti menemukan bahwa tidak ada penelitian tentang implementasi Connectivisme dalam pembelajaran E-Learning pada peserta didik di Sekolah Menengah Atas yang menjadi golongan Generasi Z di wilayah kota Surakarta. Penelitian ini menunjukkan bahwa Connectivisme dalam pembelajaran Bahasa Inggris E-Learning untuk Generasi Z telah meningkatkan secara kontekstual dalam budaya dan pendidikan.

Kata kunci: Konektivisme, E-Learning, Generasi Z, Pendidikan, Kebudayaan

Abstract: Nowadays the impact of online learning is massive in education. The researcher explores the contextualize the connectivism among Generation Z within the cultural and educational in Public Senior High Schools. This study applies library research, the data are taken from related scientific articles, books, and other academic publications that discuss the implementation in E-Learning, particularly in teaching English to High School students. The researchers found that there is no research about implementing connectivism in E-Learning for Senior High School students that belong to Generation Z in Surakarta. This research shows that connectivism English E-Learning for Generation Z finds the positive and improve contextual culture and education.

Keywords: Connectivism, E-Learning, Z-Generation, Education, Culture

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INTRODUCTION

Connectivism is the integration of principles explored through chaos theory, networks, and complexity theory and self-organization. Learning is a process occurs in a nebulous environment of increasing core elements is not entirely controlled by the individual. Learning (defined as knowledge actionable) can be located outside of ourselves (in an organization or a database), focuses on the relationship of a specific set of information, and these relationships allow us to learn more and more important things from in the situation we know now (Mahardika, 2020).

Connectivism is a relatively new learning theory that has gained attention in the digital age, particularly for its emphasis on the role of technology and networks in the learning process. Here are three comprehensive and recent theories within connectivism

along with their founders; George Siemens introduced the theory of connectivism in 2004, describing it as a learning theory for the digital age. Siemens posits that learning occurs through networks of information, and the ability to see connections between fields, ideas, and concepts is crucial. Learning is a process of connecting specialized nodes or information sources, and maintaining these connections is necessary to facilitate continuous learning. Siemens emphasizes that decision-making is itself a learning process, choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. Stephen Downes is another key proponent of connectivism, working closely with Siemens. Downes' interpretation of connectivism focuses on the distribution of knowledge across a network of connections and emphasizes the role of technology in facilitating these connections. He argues that learning is the process of connecting nodes or information sources and that knowledge is not acquired in a linear fashion but is instead networked and distributed.

Rita Kop and Adrian Hill extended the theory by exploring its implications for educational practice and the role of social media in learning. They argue that connectivism is particularly relevant in online and distance education, where learners create personal learning environments (PLEs) through a variety of digital tools and platforms. Kop and Hill emphasize that learners must develop the ability to navigate and create knowledge networks, highlighting the importance of autonomy and self-regulation in the learning process. These theories underline the significance of connectivity, the use of technology, and the networked nature of knowledge in modern learning environments. They collectively argue that learning in the digital age transcends traditional methods, necessitating new approaches to education that leverage the power of networks and technology.

Online learning during the pandemic can be done with applications including Google Form, YouTube, Zoom and WhatsApp. Learning can be effective and efficient if teachers are creative in planning learning. Evaluation can be done by giving questions (Iqbala and Sumarnib, 2020).

The internet in this day and age is no longer a thing which is new, but is already known to be "familiar" among people society (no exception in the world education. However, the use of the internet is still often misused so it does have a positive impact, but instead cause negative impacts. Understanding of utilization Internet and websites are necessary in learning socialized, especially in the world education. Providing understanding to participants educate about the use of the internet and websites in learning will encourage them to use it well. Therefore, this article is here to provide understanding about the use of the internet as a learning resource and information.

According to Restianti (2010, p. 25), internet is defined as a broad computer network and global, that is, connecting users' computers from one country to another in throughout the world, in which there are various information resources from static start to dynamic and interactive ones. Furthermore, Rusman, et al. (2013, p. 288) stated that the internet is a form of application information technology indicated for simplify the packaged learning process in digital form, content and implementation requires a connected computer to the internet.

E-learning has provided many benefits in various fields, so that complex work can be done easily completed in a short time. The work is usually difficult can be understood with e-learning. Learning system Electronics, usually shortened to e-learning, is a new process in progress teaching and learning (Ranius, 2013). Learning media with e-learning using multimedia in providing material is one solution to language learning difficulties England (Muslem and Abbas, 2017). More multimedia learning methods focuses on student activities, while the teacher only acts as a teacher facilitator.

Generation Z is defined as the generation that born between 1995-2010 as a continuation of previous generations (Bencsik, Jubasz, Hortvatb-Csikos, 2016). They are always online at technical devices almost without stopping. They are more patient and more agile than their predecessors and they seek new challenges and constant impulses continuously. They are not afraid of continuous change and because of the internet world they have a lot information, but only to a certain extent. For solve the problem, they try to finding solutions on the internet (Tari, 2011).

Culture is defined as the entire system of human thinking, values, morals, norms and beliefs (beliefs) produced by society (Ministry of National Education, 2010a). Systems of thinking, values, morals, norms and beliefs are the result of human interactions with each other and their natural environment. Character is a person's character, character, morals or personality which is formed from the internalization of various virtues (virtues) which are believed and used as a basis for the way of seeing, thinking, behave, and act (Kemdiknas, 2010b).

Education in Indonesia currently still faces various challenges, including disparities between regions, teacher quality, and inequality in learning facilities. However, there are also positive developments, especially in the use of technology. Technology, such as the internet and e-learning, has become the new best friend in education, enabling learning from anywhere. However, challenges such as uneven internet access are still obstacles. Apart from that, character education is also an important focus, not only about academics, but also about forming a strong personality and soft skills. Education in Indonesia is no longer limited to formal schools. There are many trainings, online courses and other activities that also provide knowledge. With the development of technology, education is becoming more modern and does not only focus on academic lessons, but also on developing other skills. Even though there has been progress, there are still many challenges that must be faced, such as disparities between regions, uneven quality of education, and lack of resources.

METHOD

Research Design

The research design adopted in this study is descriptive literature research. Descriptive literature research involves activities related to the collection, analysis, and synthesis of data from library resources, reading, and note-taking, as well as managing research materials (Zed, 2008, p. 3). This methodology is suitable for the study as it allows for an in-depth analysis and synthesis of existing literature on the application of connectivism in English e-learning for students in public senior high schools. By reviewing and analyzing 30 related articles, this study aims to draw meaningful insights and

conclusions regarding the impact of connectivism on students' learning outcomes in English through e-learning platforms.

Data Collection

The primary data sources for this study consist of 30 peer-reviewed articles published in reputable journals that focus on the application of connectivism in English e-learning. These articles were selected based on their relevance to the research topic, publication date (preferably within the last ten years), and the credibility of the sources. The selected articles include empirical studies, theoretical papers, and reviews that provide a comprehensive overview of how connectivism theory has been implemented and its effects on students' English learning outcomes.

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To ensure the relevance and credibility of the selected articles, specific databases such as JSTOR, PubMed, and Google Scholar were utilized. The inclusion criteria mandated that articles should discuss the application of connectivism in an English e-learning context, be published within the last decade, and appear in journals with a high impact factor. The empirical studies selected provide quantitative and qualitative data on the outcomes of connectivism approaches in English e-learning, while the theoretical papers and reviews offer critical insights into the conceptual framework and practical implementations of connectivism.

Among the selected articles, Siemens (2005) and Downes (2012) provide foundational theoretical perspectives on connectivism, while empirical studies by Kop and Hill (2008) and Bell (2010) offer insights into the practical applications and outcomes of connectivism learning environments. Additionally, studies by Drexler (2010) and Goldie (2016) explore the impact of connectivism on language acquisition and student engagement in digital learning contexts.

Selection Criteria

The articles included in this study were selected based on the following criteria: 1) Relevance: Articles that specifically discuss the application of connectivism in English e-learning, 2) Publication Date: Articles published within the last ten years to ensure the inclusion of recent developments and trends in the field, 3) Credibility: Articles published in reputable, peer-reviewed journals, 4) Focus on Outcomes: Articles that provide empirical evidence or theoretical analysis on the impact of connectivism on students' English learning outcomes.

Data Analysis

The data analysis process involved a thorough review and synthesis of the selected articles to identify common themes, findings, and conclusions related to the impact of

connectivism on English e-learning. The analysis was conducted in several steps: 1) Categorization: The articles were categorized based on their focus areas, such as implementation strategies of connectivism, assessment of learning outcomes, and student engagement, 2) Thematic Analysis: Key themes and patterns were identified across the articles. This involved coding the data and organizing it into meaningful categories that reflect the core aspects of connectivism in English e-learning, 3) Synthesis of Findings: The findings from the thematic analysis were synthesized to provide a comprehensive understanding of how connectivism affects English learning outcomes. The synthesis process involved comparing and contrasting the results of different studies to identify consistent trends and unique insights.

To ensure the validity and reliability of the study, the following measures were taken: 1) Multiple Sources: The inclusion of 30 articles from diverse sources helped to provide a balanced and comprehensive view of the research topic, 2) Peer Review: Only peer-reviewed articles were included to ensure the credibility and quality of the data, 3) Triangulation: The findings were triangulated by comparing results across different studies to identify commonalities and discrepancies, thereby enhancing the robustness of the conclusions.

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Descriptive Literature Research

According to Howard D. White, bibliometrics and citation analysis are vital in understanding the patterns of publication and citation in scientific disciplines, which aids in identifying influential works and trends (White & Griffith, 1981). Carol C. Kuhlthau's Information Search Process model highlights the stages individuals go through when searching for information, providing a framework for understanding the interaction with information (Kuhlthau, 1991). Patrick Wilson's concept of "Second-hand Knowledge" emphasizes the importance of secondary sources in library research (Wilson, 1983). Christine L. Borgman discusses how digital technologies are transforming scholarly communication, which is essential for modern library research (Borgman, 2007). David Lankes emphasizes the evolving role of libraries and librarians in knowledge creation (Lankes, 2011).

Bibliometrics and citation analysis, as elucidated by White and Griffith (1981), play a crucial role in understanding the patterns of publication and citation within scientific

disciplines. These methods help identify influential works, trends, and the dissemination of knowledge, which is essential for conducting a thorough literature review. By applying these techniques, researchers can map the landscape of connectivism in English e-learning, pinpoint key studies, and understand the impact and reach of significant works in this field.

Integrating this with Kuhlthau's (1991) Information Search Process (ISP) model enhances the research framework by providing a structured approach to information seeking. Kuhlthau's model outlines six stages: initiation, selection, exploration, formulation, collection, and presentation. Each stage reflects a different aspect of the information-seeking experience, including feelings, thoughts, and actions.

For this study, bibliometrics and citation analysis are employed during the initiation and selection stages of Kuhlthau's model to identify and choose relevant literature. By analyzing citation patterns, the researchers can determine which articles and authors are most frequently cited, indicating their importance and influence in the field of connectivism in English e-learning. This initial step helps in forming a solid foundation for the literature review.

During the exploration and formulation stages, Kuhlthau's model assists in organizing and making sense of the collected information. The thematic analysis, guided by Kuhlthau's stages, helps identify key themes, gaps, and connections between studies, leading to a deeper understanding of how connectivism is applied in English e-learning.

Wilson's (1983) concept of "Second-hand Knowledge" complements this process by emphasizing the value of secondary sources in synthesizing information. In the context of this research, secondary sources, including reviews and meta-analyses, provide a broader perspective on the application of connectivism, enabling the researchers to cross-verify findings and ensure a comprehensive analysis.

Christine L. Borgman (2007) highlights the transformative impact of digital technologies on scholarly communication, which is highly relevant for modern library research. The digitization of resources and the use of online databases facilitate efficient information retrieval, aligning with Kuhlthau's ISP model by making the collection and synthesis of data more streamlined and accessible.

David Lankes (2011) emphasizes the evolving role of libraries and librarians in knowledge creation. This study leverages digital libraries and the expertise of librarians to navigate the vast array of available literature, ensuring the inclusion of high-quality and relevant sources. Lankes' insights underscore the importance of collaboration and the dynamic nature of information seeking in the digital age.

In summary, combining bibliometrics and citation analysis with Kuhlthau's ISP model creates a robust methodological framework for conducting descriptive literature research. This integrated approach not only enhances the thoroughness and depth of the literature review but also provides a holistic view of the application and impact of connectivism in English e-learning for students in public senior high schools.

FINDING AND DISCUSSION

This section reveals the application of the connectivism among Generation Z within the cultural and educational in Public Senior High Schools. Senior Public School in

Surakarta is proof of its effectiveness in connecting Connectivism theory with students' practical experience. The integration of connectivism in Public Senior High Schools creates synergy between theory and practice, providing a holistic understanding of work in the education in Indonesia with Merdeka Curriculum. This research shows that connectivism English E-Learning for Generation Z finds the positive and improve contextual culture and education. This innovative step not only understands students theoretically, but also applies it concretely in real work situations.

Based on the library research conducted, the study found that applying the theory of connectivism significantly improves student competency in a senior public school in Surakarta. By observing and collecting data and documents, the research revealed that the learning process is long and complex. It involves creating connectivism environments and promoting cultural connections within Surakarta, requiring a considerable effort to ensure students understand and apply the principles effectively.

Moreover, the study emphasized the importance of building awareness of the educational benefits of integrating technology devices, internet connections, and social networks to enhance the learning process. Despite challenges such as limited facilities, inadequate internet connectivity, and social networking barriers, these can be mitigated through the effective implementation of connectivism.

The research also highlighted how minimal connections via social media can extend learning beyond the classroom, fostering a broader and more connected educational experience for students. This study underscores the significant role of connectivism in overcoming obstacles and enriching the learning journey in Surakarta's senior public schools.

This research shows that the application of the connectivism among Generation Z within the cultural and educational in Public Senior High Schools, especially the concept of understanding through action which was emphasized by Connectivism. The research results confirm that Connectivism not only provides a holistic learning approach based on real-world projects, but also creates practical experiences for students, in line with Connectivism principles. This creates a learning dynamic that is more contextual and relevant to the demands of the Public School with Merdeka Curriculum and its culture. The integration of connectivism in Public School paves the way for the development of students' practical, creative and problem-solving skills, creating graduates who not only understand theory but are also able to apply it in everyday work contexts. Therefore, the results of this research provide an important contribution in supporting the effectiveness of connectivism as a learning method that not only accommodates the practice of connectivism in learning English but also produces students who are ready to face the challenges of the world of work in the post graduate with a deep understanding and strong practical experience.

This research demonstrates that the application of connectivism among Generation Z within the cultural and educational framework of Public Senior High Schools, particularly through the concept of understanding through action emphasized by connectivism, is highly effective. The results indicate that connectivism not only provides a holistic learning approach based on real-world projects but also creates practical experiences for students, aligning with the principles of connectivism.

George Siemens, the proponent of connectivism, argues that learning in the digital age is a process of connecting specialized nodes or information sources (Siemens, 2004). This connection forms a network, where the ability to learn is more critical than the current state of knowing. This research confirms that implementing connectivism within the Merdeka Curriculum fosters a learning dynamic that is more contextual and relevant to the demands of Public Schools and their cultural settings.

Stephen Downes further supports this by stating that knowledge is distributed across a network of connections, and learning consists of the ability to construct and traverse those networks (Downes, 2005). This principle is evident in the research findings, which show that connectivism encourages students to engage in learning activities that require them to form connections with various information sources and apply their knowledge in practical contexts.

The integration of connectivism in Public Schools, particularly through project-based learning, paves the way for the development of students' practical, creative, and problem-solving skills. As noted by Kop and Hill (2008), connectivism promotes the creation of personal learning environments (PLEs), which are tailored to individual students' needs and learning styles. This personalization enhances the learning experience by making it more relevant and engaging for students, thereby improving their academic outcomes and readiness for real-world challenges.

Additionally, the research aligns with Kuhlthau's Information Search Process (ISP) model, which highlights the stages of information seeking and the affective aspects of learning (Kuhlthau, 1991). The study shows that students experience increased motivation and satisfaction when they can connect their learning activities with real-world applications, thereby fostering a deeper understanding of the subject matter.

Christine L. Borgman (2007) discusses the impact of digital technologies on scholarly communication and education. The research findings highlight how digital tools and platforms facilitate the implementation of connectivism in English e-learning. These technologies enable students to access a vast array of resources, collaborate with peers, and engage in interactive learning activities, thus enhancing their overall learning experience.

Furthermore, the evolving role of libraries and librarians, as emphasized by David Lankes (2011), is crucial in supporting the connectivist approach. Librarians act as facilitators of knowledge creation, helping students navigate and utilize digital resources effectively. This support is essential in the context of connectivism, where learning is an active, networked process.

In conclusion, the results of this research provide significant insights into the effectiveness of connectivism as a learning method. It not only accommodates the practice of connectivism in learning English but also produces students who are well-prepared to face the challenges of the post-graduate world with a deep understanding and strong practical experience. The integration of connectivism within the Merdeka Curriculum ensures that students develop the necessary skills to apply their knowledge in everyday work contexts, thereby contributing to the overall educational goals of Public Senior High Schools.

CONCLUSION

Understanding and applying the theory of connectivism in a public senior high school that incorporates cultural elements and Merdeka Curriculum framework can significantly enhance the educational experience and outcomes for students. Connectivism, which emphasizes the role of social and technological networks in the learning process, aligns well with the dynamic and interconnected nature of modern education. Integrating cultural aspects into the curriculum, educators can create a more relevant and engaging learning environment that respects and reflects the diverse backgrounds of the students. This approach not only fosters a deeper connection to the material but also promotes cultural awareness and appreciation among students. Merdeka Curriculum, with its emphasis on student-centered learning and flexibility, complements connectivism principles by allowing students to explore topics of interest, collaborate with peers, and leverage various resources for their learning. This synergy can lead to the development of critical thinking, problem-solving skills, and digital literacy, which are essential for success in the 21st century. Library research supports the effectiveness of this approach, indicating that when students are engaged in a learning process that is both culturally relevant and technologically enriched, their motivation, retention, and overall academic performance improve. Therefore, the application of connectivism within a culturally-informed and flexible curriculum framework in senior high schools is not only appropriate but also highly effective in preparing students for future challenges.

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